

## What's next for Sun?

Sun made a big mistake in turning down IBM's \$7 billion acquisition offer, say analysts who question the vendor's ability to execute a turnaround on its own. **Page 12.**



## Free reign to shut down Internet

BackSpin columnist Mark Gibbs questions what politicians were thinking when they proposed giving President Obama an Internet Kill Switch to counter a cyber attack. **Page 34.**

# NETWORKWORLD

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April 13, 2009 ■ Volume 26, Number 14

## Feds join Twitter revolution

Microblogging is taking flight in unlikely skies: the U.S. federal government. **Page 12.**

## Microsoft eating up U.S. and global netbook markets

Microsoft owned three-quarters of worldwide market last year, and industry watchers see that share on the rise. **Page 15.**

## Are you doing your part?

Columnist Paul McNamara cites research that suggests "leisure surfing" at work increases productivity. **Page 34.**

## ITRoadmap

### Upcoming ITR

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## Economy changing work game for 'Gen Y'

BY CARA GARRETSON

Two years ago, employment experts advised enterprises to exploit new technologies and relax corporate rules to attract sought-after young workers. Today those same experts are coaching young job-seekers to compete with more experienced applicants by becoming more, well, corporate.

The age group known as Generation Y or Millennials, defined roughly as the 70 million Americans who were born between 1977 and 2002, has been considered desirable because of their comfort level with all things new, particularly technology. However, because of the recession, Millennials are now competing for positions with older, more experienced applicants who have demonstrable skills. Job-seeking Millennials today must be less concerned with the perks and privileges a potential employer offers and focus instead on demonstrating their value to interviewers.

"Right now employers are accommodating within reason," says Dave

See Youth, page 16

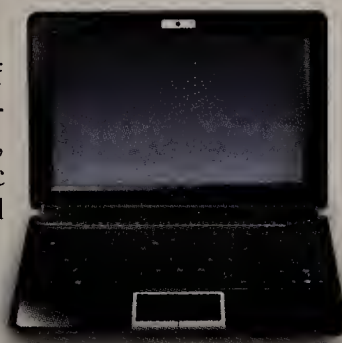
## Netbooks knocking on the door of IT

BY JOHN COX

One possible future of mobile computing is on display in classrooms in Fresno, Calif., where the public school district has deployed 10,000 HP netbooks with an upgraded Cisco wireless LAN.

While the term "netbook" has no formal definition, it typically applies to a class of mobile computers — from vendors such as Asus, HP, Acer and Dell — that are smaller than conventional laptops. They have lower resolution displays of 7 to 11 inches, can be much lighter overall and rely on less powerful CPUs. To some critics, that adds up to a crippled laptop.

But the best ones are extremely



The Asus Eee PC 1000HE netbook is a top-rated example of that genre.

portable, and can slip into a large coat pocket, have an almost full QWERTY keyboard, offer a screen that is vastly bigger than a smart-phone, and are inexpensive: less than \$500 and sometimes well under. Sales exploded last December and are expected to continue strong.

A few days ago, Kurt Madden, CTO for Fresno Unified School District, watched a classroom of fifth graders working with HP Mini-Note 2133s, netbook-class machines with 8.9-inch screens, a nearly full-sized QWERTY keyboard, several of the Microsoft Office applications, Internet Explorer and precious little else.

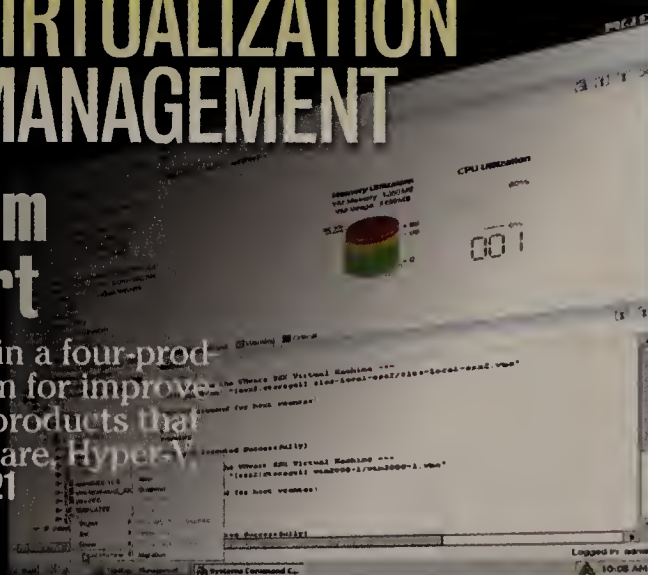
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## NETWORKWORLD CLEAR CHOICE

## VIRTUALIZATION MANAGEMENT

### Cross-platform tools fall short

■ CA comes out on top in a four-product test, but there's room for improvement when it comes to products that can manage mixed VMware, Hyper-V, Xen environments. **Page 21**



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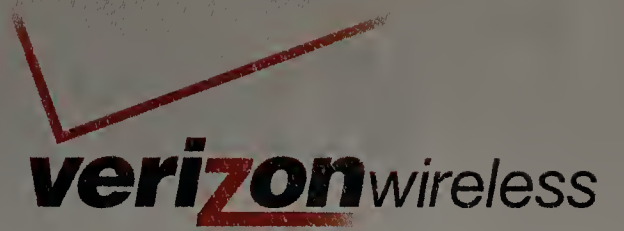
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# NETWORKWORLD

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## GOODBADUGLY



### Flash storage start-up lands \$47 million

Flash storage start-up Fusion-io has had a big start to 2009, remaking its management team with former Apple guru Steve Wozniak and just last week landing a \$47.5 million funding round. Fusion-io makes PCIe cards loaded with flash memory that are inserted into servers, dramatically speeding up I/O-intensive applications. The company launched in late 2007, and has since caught the attention of recent "Dancing With the Stars" showoff Wozniak, who joined the Fusion-io advisory board in October 2008 and in February became the company's chief scientist.

### Microsoft warns about phony security software

Microsoft detected two Trojan horse programs, Win32/FakeXPA and Win32/FakeSecSen, masquerading as security software on more than 3 million computers in the last six months of 2008, according to the company's most recent Security Intelligence Report. With the Washington state attorney general, Microsoft launched eight lawsuits in September 2008 aimed at tracking down those responsible for perpetrating the scams.

### Vandals strike AT&T net

AT&T says the service outages that hit California last week resulted from an apparent act of vandalism and it was working with law enforcement to nail the culprits. At first the company said the outage was affecting both wireless and wireline services in some areas of California and it was caused by an unspecified number of fiber-optic cable cuts in the San Jose area. The outage in California marks the first major outage for AT&T since last December, when a snowstorm knocked services offline through the Midwestern United States.

## NETWORKWORLD CLEAR CHOICE

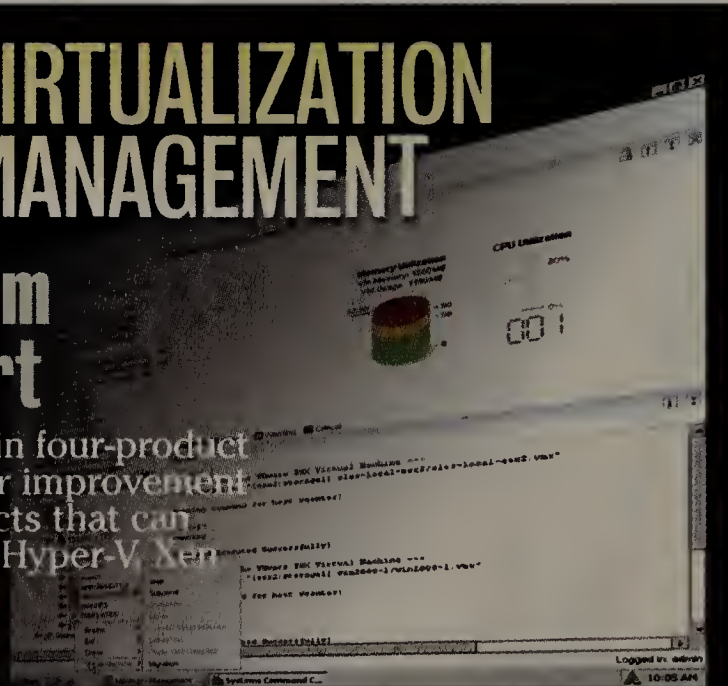
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## Does Cisco need Sun to shine in the data center?

Re: Should Cisco move on Sun? ([www.nwdocfinder.com/9534](http://www.nwdocfinder.com/9534)):

In search of new revenue stream, Cisco has placed a significant emphasis on its data center strategy. The question for Cisco is really if the acquisition will take them beyond current partnership they have with IBM, HP, Dell and others. Acquiring Sun will make Cisco a big player on the high-end server market overnight. On the Intel side, Cisco is already making good progress with VMware/virtualization.

My initial thought was that the IBM bid on Sun was originally planned to preempt and snatch away from Cisco considering what happened in 1996 when IBM tried to acquire Kalpana when Cisco snatched it from IBM. In any event, there is a big risk/reward for Cisco on Sun acquisition.

Anon

## Is gov't bill about attack on Internet or attack on freedom?

Re: Bill would give Obama power to shut down Internet, networks during cyber attacks ([www.nwdocfinder.com/9535](http://www.nwdocfinder.com/9535)):

By and large all government networks run over private carrier networks. The government has no control over any circuits except where they have an entry point into a carrier POP.

This is as it should be. Our country was built upon the concept of personal economic freedom, which in turn leads to free market economics. This basic tenet of the American success story is already under threat.

What's next? Government approval of Internet services? Yeah, great, let's imitate countries like North Korea, China and Saudi Arabia.

Spee

## Train younger workers at your own risk

Re: Afraid of losing your job to a younger, cheaper IT worker? ([www.nwdocfinder.com/9536](http://www.nwdocfinder.com/9536)):

The person over 45 or 50 that gives up all their accumulated knowledge to an entry-level person coming into modern companies is doing nothing but signing their own pink slip.

I will train a newbie enough for them to be functional but never willingly give up hard-learned knowledge for free any more. There is no loyalty from the modern companies to the employees — why should I show any in return? Pay me for the knowledge I have gleaned over the last 30 years. It is mine, it is

valuable, and does not belong to the company that is currently employing me.

Anon

## Report of compromised power grid sparks FUD

Re: Cyberspies have compromised U.S. power grid, newspaper reports ([www.nwdocfinder.com/9537](http://www.nwdocfinder.com/9537)):

This seems to be a scare tactic to increase/force more network security protocols onto power generators and transmission entities. There is already enormous efforts by asset owners to put in place electronic and physical security controls by June 30. All this work is mute as the easiest way to take down an entire generation/transmission system is to target the main system transmission lines. I wonder if DHS = FUD.

Anon

E-mail letters to [jdix@nww.com](mailto:jdix@nww.com) or send them to John Dix, editor in chief, Network World, 492 Old Connecticut Path, Framingham, MA 01701-9002. Please include phone number and address for verification

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## BLOGOSPHERE

■ **Should Cisco move on Sun?** Cisco Subnet blogger Jim Duffy wonders after IBM has apparently lost its lust for Sun, should Cisco make a play for the beleaguered company? What's to lose? Cisco wants to get into data center servers in a big way, as indicated by its recent Unified Computing System announcement. All the industry scuttlebutt has been about Cisco competing with HP and IBM in data center blade servers with UCS, but Cisco is starting from ground zero. It has no base. In order to compete with IBM and HP, it first has to leapfrog Dell and Sun. Sun's looking for a buyer; it can be had for \$6 million to \$7 billion; Cisco has \$30 billion in cash; Dell and Sun are the low hanging fruit in Cisco's ambitions to pick the blade server tree. Sun also has some nifty software, such as Java and OpenSolaris, that Cisco could benefit from as it looks to move up the stack.  
[www.nwdocfinder.com/9538](http://www.nwdocfinder.com/9538)

■ **BlackBerry Storm needs bailout and stimulus package.** Cisco Subnet blogger Mitchell Ashley says despite RIM's impressive \$518.3 million fourth quarter, a 25.6% year-over-year increase, and the reasonable numbers of Storms sold, it's really a device that's not ready for prime time. My verdict on the Storm? Plain and simple — I hate it. This is one of the worst devices I've used. Based on my experience I'd say run, don't walk, as far away from the BlackBerry Storm as possible. I'm on my second Storm and it's getting sent back just like the first one. The Storm does not do what it says it will do, at least not on a reliable basis, and sometimes not at all. The list of issues I've had with my Storm are long and frustrating.  
[www.nwdocfinder.com/9539](http://www.nwdocfinder.com/9539)

■ **Need a bigger security budget? Star in your own hacking video!** Blogger Jamey Heary has assisted many security directors in their process of justifying new security projects and budgets. There are two techniques he's seen work. Budget approval technique No. 1 is whitehat hacking your environment. Said another way, this is a technique that makes your nebulous, sky is falling security vulnerabilities very personal and verifiable to your executives and board of directors. Now, you are ready to start your sanctioned penetration testing. Make sure that you have any administrator or equivalent account privileges removed from your user accounts. This is so that you don't have any unfair advantages above and beyond the normal jdoe user. Next, come up with an attack/hack plan.  
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### Keyboard design prevents typos?

A keyboard with tactile error prevention stops users from making typing errors.

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IDG NEWS WIRE:



### GM, Segway show off urban vehicle

General Motors has unveiled a two-wheel, two-seat electric vehicle jointly developed with Segway.

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### Handgrip exerciser doubles as mouse

A handgrip exerciser is hacked to function as a mouse. Get a workout while you check your e-mail.

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BEST OF NWW'S

NEWSLETTERS

## BSM on the brain

**Network management:** Buying new software might not be a top priority for many IT managers working to get more from their current infrastructure. But management software makers argue that their business service management (BSM) products designed to monitor IT components and automate actions so as to optimize business services become even more relevant in tough economic times. According to Gartner, the worldwide enterprise software market will experience flat growth in 2009, seeing just a .3% uptick over 2008. With nearly \$222.6 billion expected in software revenues in the coming year, IT buyers are looking at software-as-a-service, cloud and other alternatives to purchasing annual software licenses, Gartner says. Yet such forecasts aren't stopping vendors such as BMC, ManageEngine and Zyrion from separately updating their software products designed to reduce manual labor, speed problem resolution and improve IT service delivery across enterprise and other companies. "BMC is helping IT staff do more with less by reducing manual work, automating tasks and introducing efficiencies in IT operations," says Gerry Roy, director of solutions management for service support at BMC. "Customers have to reduce costs not just in the tools they do decide to buy but also in how they work. By reducing the costs associated with IT operations with automation and service management, they can cut costs for their companies

and potential invest savings in growth areas."  
[www.nwdocfinder.com/9527](http://www.nwdocfinder.com/9527)

**SMB:** The early adopter "cloud crowd" makes the most headlines, but they're only the tip of the small business iceberg. Looking at various data storage vendor customer numbers has convinced me 90% of small businesses are still mostly land (or LAN) based. Some people don't yet trust Internet data storage, and some like to wear data storage suspenders with their data storage belts. The good news for both? Options for combo cloud and local storage hybrids continue to grow. What do you need to do with your files? Create them, share them, change them, back them up, and archive them in regulated industries. You can do all these things locally or online. Some early adopter small companies do everything online, but most small businesses still do everything locally. Smart business now requires a mixture of local and online data storage to add offsite backup in case of a disaster, and easy data sharing with remote coworkers and business partners. The best local and online combination I've seen, for the last three years, is FileEngine, a small company in Indianapolis. Custom hardware, in fire engine red (the owner jokes it's "file engine" red) provides local user file storage much like a Windows Server without the Web and e-mail server cost and complexity.  
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# 1&1



# After attacks, Excel update due from Microsoft

**C**orporate IT staffers will get a double whammy this week, as both Microsoft and Oracle are set to release critical security updates on the same day, including a likely fix for an Excel bug that has been used by cybercriminals. As part of its monthly Patch Tuesday program, Microsoft plans to release eight updates: Five of them are for Windows, with a single update each for Internet Explorer, Excel and Microsoft's Internet Security and Acceleration server. Oracle's patches will contain 43 security fixes, including 16 patches for the company's flagship database software. There will also be 12 vulnerabilities patched in the Oracle Application Server, as well as a handful of fixes for the company's E-Business Suite, PeopleSoft and JD Edwards Suite, and for the BEA application server suite. [www.nwdocfinder.com/9548](http://www.nwdocfinder.com/9548)

**Cisco to buy Tidal Software.** Cisco will pay approximately \$105 million in cash and retention-based incentives to acquire Tidal Software, a privately held maker of application management and automation software for service-oriented architectures and data centers. The company's Intersperse software combines application management, business process tracing and run-time monitoring across multiple application servers to build a detailed view of SOA applications and environments. The software enables the proactive detection of problems and root-cause analysis, Tidal says. In some cases it can help IT managers create self-healing capabilities in their SOA deployments. Cisco says Tidal's software will help customers to optimize the performance of their business applications and automate operations in real time, which will reduce operational costs. [www.nwdocfinder.com/9549](http://www.nwdocfinder.com/9549)

**Engineer unemployment rate spikes.** The unemployment rate for engineering and computer occupations is rising faster than for other professionals, according to the IEEE, which reports the unemployment rate for all engineers jumped from 2.9% to 3.9% from the last quarter of 2008 to the first quarter this year. The IEEE says the numbers grew faster when compared with the increase in unemployment for all professional workers — from 3% to 3.7% — over the same timeframe. And perhaps even more worrisome, the IEEE says, is the increase of the unemployment rate from 1.2% overall in 2007 to nearly 4% now. [www.nwdocfinder.com/9550](http://www.nwdocfinder.com/9550)

**Netscape alums tackle cloud storage.** A cloud storage start-up is entering the market, promising an enterprise-class file system with snapshots, replication and other features designed to simplify adoption for existing users and applications. Zetta, founded in 2007 by veterans of Netscape, emerged from stealth mode last week with \$11 million in

funding and Enterprise Cloud Storage, a Web-based storage platform that will compete against Amazon's Simple Storage Service and a growing number of cloud vendors. Zetta's goal was to build a Web-based storage system that would be accepted by enterprise IT professionals for storing primary data, according to its founders — who include CEO Jeff Treuhaft, formerly one of Netscape's first employees, and Lou Montulli, an early Netscape employee who invented Web cookies. [www.nwdocfinder.com/9551](http://www.nwdocfinder.com/9551)

**Apple seen readying huge Wi-Fi boost for iPod Touch, iPhone.** Apple seems to be laying the groundwork to introduce high-capacity, low-power 802.11n Wi-Fi to the iPod Touch, and presumably to its 3G-enabled companion, the iPhone. Programmers sifting through the recent-



ly unveiled beta code of the iPhone 3.0 operating system uncovered radio component specifications that show a shift to a different Broadcom Wi-Fi chip, the BCM4329, for a future iPod Touch model. The change would be a huge jump in performance for users of both devices, which now use a Wi-Fi chip that supports 802.11b/g, with a throughput of less than 25Mbps on the 2.4GHz band. But the change would almost mean having to buy a new Touch or iPhone with the 802.11n chip, and some observers say

Apple also needs to upgrade the CPU to enable both handhelds to fully exploit 802.11n performance. [www.nwdocfinder.com/9552](http://www.nwdocfinder.com/9552)

## HP automates management of VMware, virtualization systems.

Updates to HP's business service automation suite are designed to help customers cut the cost of managing virtualization and improve service quality. HP added new capabilities to its Storage Essentials and Operations Orchestration products and launched BSA Essentials, a set of subscription services that will provide access to security alerts and updates on regulatory policies and compliance auditing, the company says. "It is difficult for many enterprises to shift mission-critical virtual machines from one physical system to another during a hardware failure or upgrade because while their server stacks may be mobile, the network connections to [storage-area networks], databases and other legacy systems may not be mobile. That's why HP is trying to make their other management products more virtual machine-aware," says Jasmine Noel, principal analyst and co-founder at Ptak, Noel & Associates. [www.nwdocfinder.com/9553](http://www.nwdocfinder.com/9553)

**IBM lights online collaboration services.** IBM/Lotus has launched the first major piece of its LotusLive online strategy, its biggest move yet to deliver collaboration services online to corporate users. The company went live last week with LotusLive Engage, a bundle of services that includes instant messaging, Web conferencing, file sharing and lightweight project management. Engage is priced between \$15 and \$55 per month per user depending on which services are used. It will be followed with an online e-mail service based on technology IBM acquired when it bought Outblaze earlier this year. Other services also are slated for release this year, but IBM/Lotus officials would not detail what functionality they will provide. [www.nwdocfinder.com/9554](http://www.nwdocfinder.com/9554)

## Salesforce.com releases no-cost 'lite' mobile application.

Salesforce.com unveiled a mobile application that is available to all users at no charge. Salesforce.com Mobile Lite is not as full-featured as the on-demand CRM vendor's full-fledged mobile application (which is included with an unlimited subscription but costs an extra \$50 per user per month for professional and enterprise edition subscribers). For example, while Mobile Lite users can look at accounts and respond to leads, the application doesn't support custom objects. Mobile Lite will initially support iPhone, BlackBerry and Windows Mobile. [www.nwdocfinder.com/9555](http://www.nwdocfinder.com/9555)



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# Sun messed up IBM deal

BY JON BRODKIN

With IBM/Sun negotiations reportedly at a standstill, a consensus seems to be emerging among industry analysts: Sun has made a colossal mistake in turning down IBM's \$7 billion acquisition offer.

"My first thought was, IBM threw Sun a rope. They used it to make a noose," Annex Research analyst Bob Djurdjevic writes in an e-mail.

IBM/Sun merger talks collapsed after "disputes over millions of dollars of payout to Sun executives, in addition to the takeover price and conditions attached to the deal," the Bloomberg news service reported last week. Sun's board is expected to meet on Wednesday to discuss the unraveling of the deal and what comes next, Bloomberg also reported.

"If it is indeed true that the Sun Board turned down the IBM offer because they thought a 100% premium on the value of their listing ship was too low a price in the midst of an economic storm, then Sun deserves to go down," Djurdjevic says. "And to go down in the history of IT as yet another company that let pride get in the way of good judgment."

"Pure insanity" is the phrase used by Enterprise Strategy Group analyst Brian Babineau to describe Sun turning down the premium offered by IBM.

While Sun has many interesting technology divisions, including servers, storage, Java and other software, the company has consistently failed to turn a profit and analysts are largely pessimistic that it can execute a successful turnaround on its own.

Analyst Judith Hurwitz notes in her blog that rumors have Sun Chairman and co-founder Scott McNealy taking the company over from current CEO Jonathan Schwartz. It worked for Steve Jobs and Apple, but Sun has failed to gain leadership roles in both the hardware and software markets and probably will not have a good future as an independent company, she writes.

According to Bloomberg, Schwartz and McNealy both have contracts guaranteeing them three times their annual pay in salaries and bonuses if Sun is acquired. IBM did not want to make such payments to the executives, Bloomberg reported, citing anonymous sources. Sun objected to IBM wanting too much control over Sun's projects and employees before the closing of a deal, and wanted greater assurance from IBM that it would complete the transaction even if it faced antitrust review, Bloomberg reported.

Sun has not commented about the rumored acquisition but issued a statement to Reuters saying the company "is committed to its leadership team, growth strategy and building value for its shareholders."

Despite Sun's reassurances, Babineau speculated that the failed talks could lead to a

Yahoo-esque "shareholder revolt" in which investors force Sun to make leadership changes.

Shareholder-filed lawsuits are a possibility if Sun can't turn itself around, other analysts were quoted as saying in a *San Francisco Chronicle* story.

"We question management's ability to do a successful turnaround on their own," Bill Kreher, a technology analyst with Edward Jones, told the *Chronicle*. "The transition is challenging and is taking longer than expected."

*Network World* readers weighed in on the failed IBM/Sun talks as well, speculating that companies such as Cisco, Oracle or Apple might be interested in purchasing Sun.

"With the amount of flirting Cisco has been doing beyond their core traditional networking technologies of late, it would seem in my eyes that the acquisition of Sun by Cisco would be a logical one and would bring Cisco on a par with HP, IBM and Dell in one fell swoop," one reader said in response to the *Network World* story. "Collapse of IBM/Sun deal could leave Sun without a suitor, analysts say."

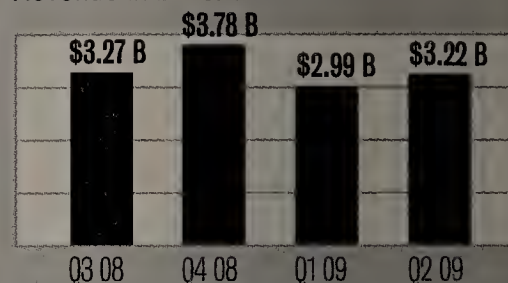
One reader called Sun a "great company with bad marketing." Another reader said it's too easy to blame marketing and sales for the failures of a technology company.

"Great products is the engineering way of thinking 'If we build it, they will come,'" the reader commented. "Doesn't work in baseball either. Silicon Valley is littered with the carcasses of 'great product' companies that didn't offer real value to customers." ■

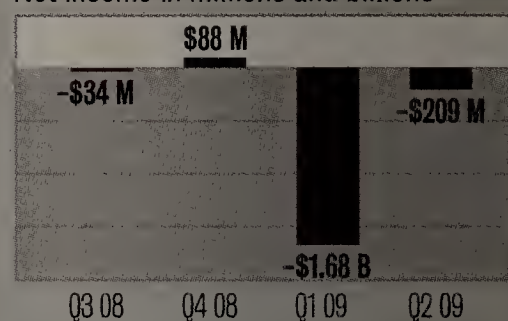
## Sun's numbers

Sun reportedly rebuffed IBM's offer of \$9.10 to \$9.40 per share — though Sun's stock was trading in the \$4 to \$5 range in March, before news of IBM's offer surfaced. Revenue and profit numbers for the last four quarters (ending with Sun's fiscal 2009 second quarter, which closed Dec. 28) illustrate Sun's ongoing struggles.

Revenue in billions



Net income in millions and billions



## 10 Twitter tips from early federal adopters

BY CAROLYN DUFFY MARSAN

Having trouble convincing your boss that Twitter isn't a waste of time? Then you might find it interesting to learn that social media evangelists across the U.S. federal government are blasting out Tweets several times a day to their constituents. Here are their suggestions for how to integrate new media tools into a large, old-fashioned bureaucracy:

**1. Identify a business problem you are trying to solve.**  
"You really want to focus on the business problem you are trying to solve and the communities you need to engage to help you solve that problem," advises Lena Trudeau, program area director for the National Academy of Public Administration. "You need to make

the value proposition clear, so the people who engage get something out of the process."

The Defense Information Systems Agency, for example, uses a commercial mash-up tool from JackBe to allow military commanders to create real-time feeds using information from many disparate sources, says DISA CTO Dave Mihelcic. The Web 2.0 software solves a real-world problem for military commanders. "If senior leaders and decision-makers can get a common visual depiction of a situation, it will be easier for them to synchronize their decisions," Mihelcic explains.

**2. Get buy-in from management.**  
Involve all of the key stakeholders: the people who have the informa-

See Twitter, page 32



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## Netbook

continued from page 1

Each student was creating a report on one of the U.S. states. Via the netbooks' integrated 802.11g Wi-Fi radio, they linked to the WLAN to access the Internet, surfing for statistics and other data, photographs and even audio files of the state bird chirping. They pulled all this into Microsoft Publish, creating their multimedia reports that were posted to their personal sites on the school's SharePoint server, where each report could be viewed by teachers.

"I would guess that 50% or more of the time they're on the netbook, they're accessing the Internet," Madden says.

Although the Fresno students aren't yet carrying the netbooks around (generally, the devices are assigned to classrooms, where they're shared by students), they work in and through a pervasive wireless network and are always connected. And Madden notes that the school's PCs now have fewer native applications than ever before, because so much of the processing, data, storage and applications are online. That means that users need something much less than a full-blown notebook PC to work, study, collaborate and entertain.

### The online enterprise

That's a model that fits with corporate computing trends, according to analysts. Mobile users typically need access to resources on the corporate network, and increasingly to resources on the Web. Desktop virtualization, which centralizes desktop applications for more cost-effective management and improved security, is a related trend that is, in effect, offloading tasks and applications that previously ran on the notebook.

"These netbooks are comparable to a 2003 notebook" in performance, says Rob Enderle, principal analyst for Enderle Group, which focuses on personal technology products. "People woke up and said, 'well, that's good enough.'"

For some enterprise users and their application requirements, netbooks' portability and price will be compelling. But potential customers may want to wait for a few months to buy one.

The most recent netbook introductions make some of the products seem almost indistinguishable from the very low-end traditional notebook PCs. Bigger screens, but none yet reaching 12 inches, bigger hard drives, more weight for longer-running high-capacity batteries and so on, and price tags well over \$500. But even so, if you need a notebook's raw power, screen size or keyboard, you won't get it on a netbook.

"Netbooks as currently specified are not capable of full, rich multimedia performance," says Andrew Borg, senior research analyst for wireless and mobility, with Aberdeen Group. "The CPUs are not multi-cored or multi-threading. They're underpow-

## NETBOOK SALES SOARING

**Netbooks were a major force in laptop sales in 2008, pushing the growth rate up by roughly one-third, according to NPD. The unit growth rate for laptops overall was 16% not counting netbooks. But when you count netbooks, that jumped to 21%. Shipments of low-cost 7- to 12-inch netbook displays were 13.1 million in 2008, according to iSuppli, which forecasts a jump to 47.4 million in 2012.**

ered. Any kind of video processing is beyond them. Unfortunately, these are often requirements in the enterprise."

But 12 months from now, the landscape will be dramatically different, he says, starting late in 2009. "We look forward to another round of netbooks coming that will be much less likely to disappoint enterprise users," Borg says. New CPUs, including new version of Intel's Atom CPU but also upcoming ARM-based rivals such as Qualcomm's SnapDragon processor, with much higher clock speeds and multi-threading, will boost performance and cut power demands. Solid state drives will keep dropping in price. And Windows 7, specifically tuned for netbooks, will be available. "A device with this profile, for under \$400, could take off like wildfire," Borg says.

"Wildfire" also describes the intense speculation that Apple will introduce a Mac netbook.

The next generation of netbooks will create a more truly mobile user experience, says Jeff Chu, mobile computing product manager for ARM Holdings, which provides the intellectual property that is realized in silicon products from more than 200 chip companies. The new ARM-based chips will be highly integrated, minimizing or eliminating boot-up waits and extending battery lifetimes to as much as several days, according to Chu.

### Netbook challenges, tradeoffs

"There is an enterprise play for netbooks," says Mort Rosenthal, CEO of Enterprise Mobile, a Microsoft-backed company that specializes in large-scale mobile deployments based on Windows and Windows Mobile clients. "But it does have some interesting problems."

While the current crop of netbooks overwhelmingly run Windows XP, which Microsoft has reprieved for this segment because Vista performed dismally on them, many of the netbooks run XP Home, "which is sub-optimal for the enterprise," Rosenthal says.

Enterprises should look for XP Professional until Windows 7 is released. Microsoft made unplanned "engineering investments" in Windows 7 specifically for netbooks: reducing

the operating system footprint, speeding boot-up and shut-down times, enhancing battery life and multimedia capabilities.

For now, corporate customers can expect less configuration flexibility with netbooks than with notebooks, until vendors are able to deliver hardware and software builds targeted at the enterprise market.

A number of the first netbooks were Linux-based and they still hold a fair share of the market, but experts say that number could shrink. More recently, there has been speculation that the Android operating system, pushed by Google and the Open Handset Alliance, would be offered on future netbooks.

Netbooks aimed at the enterprise need to do more about device security, according to Enderle. They should include a cryptoprocessor based on the Trusted Platform Module specification for securely creating, storing and managing encryption keys on a device, and some kind of biometric reader or similar access security, he says.

Windows XP and future Windows 7 devices should, by definition, be able to participate in Windows management and security infrastructures.

Enderle argues that Intel and Microsoft artificially are constraining netbook screen sizes. But an HP executive says it's really all about a complex set of trade-offs. "When you go to a bigger screen, you add more weight, and often more cost," says Carol Hess-Nickels, director of worldwide business notebook marketing for HP. "We want to stay at a nice low-end price point."

### All wireless, all the time

Though most netbooks have an Ethernet jack, they're really designed as wireless devices, sometimes with integrated 802.11 Wi-Fi (with 802.11n becoming more common), Bluetooth and a cellular radio. Some analysts expect some models will be introduced with WiMAX support.

For enterprises, the cellular option is fraught with problems, even as carriers eagerly embrace netbooks. AT&T just announced a special offer for a \$49 netbook if users sign up for a two-year data contract. But carriers are lagging in creating a smooth activation process, Enterprise Mobile's Rosenthal says.

The company bought two netbooks, which he won't name, both with embedded cellular cards. In one case, the manufacturer was to start the activation process and then pass it over to the carrier. "That pass didn't work," Rosenthal says. When the user called the carrier to confirm the contract agreement, the carrier representative "didn't even know what to do with the call," he says. In the second case, the netbook was bought at Radio Shack, where a staffer worked diligently and hard. But the process still took two and a half hours to complete.

Carriers will need to invest in streamlining these practices and improving support for their enterprise customers. ■



# Microsoft dominates netbooks

## But Linux developers not lying down

BY JOHN FONTANA

Microsoft's chest thumping last week over its 96% share of the U.S. netbook market for February doesn't appear to be just its normal bravado as the company also is charging toward dominance on a global front.

According to statistics from IDC, Microsoft owned 76% of the global netbook market in 2008 and that number will only get bigger in the coming years.

In 2008, Linux came in with a share of 24% and IDC predicts that number will be in the single digits come yearend.

Globally, IDC says 10 million netbooks shipped in 2008. That number is expected to double this year and grow by 25% in 2010.

The result would seem to be another market where Microsoft dominates.

The only developments that may derail the juggernaut are mobile device chips, namely the ARM processor, that will be the platform for Google's Android operating system, Canonical's Ubuntu and other Linux distributions. Netbooks with those configurations are slated to hit the market in the second half of 2009. In addition, the Moblin open source project is focusing its platform efforts on netbooks

and mobile devices.

Those developments could bring Linux-based operating systems a bigger share of the netbook market, but they will need one important ingredient that Microsoft has in spades. "The advantage for the Windows platform is that it has a lot of developers and a lot of applications," says Richard Shim, an analyst with IDC.

Shim says the dynamics could change if the non-Windows platforms attract a decent amount of developers who create a number of must-have applications that run on alternative platforms.

"Obviously, that would change the game," Shim says.

Online services, such as e-mail and social networking, could be another driver as users install fewer, if any, applications on their machines.

Some also point out that the buyer should beware of the true costs of Windows netbooks. But others say the fact that the industry has no solid definition for the value of a netbook will help Windows maintain its lead.

The netbook is stuck in limbo between the ultra-convenience and voice capabilities of the

smartphone and the power and full screen and keyboard size of a laptop.

"Netbooks will continue to be small, low-cost entry products and people won't see them as some new product category but as small notebooks," says Stephen Baker, vice president of industry analysis for market research firm NPD Group.

It was NPD's research that Microsoft cited last week when it said it owned 96% of the U.S. netbook market in February.

Baker says the combination of the forthcoming Windows 7 and the perception that netbooks are smaller versions of PCs will wipe out the notion that the netbook is something different from a PC.

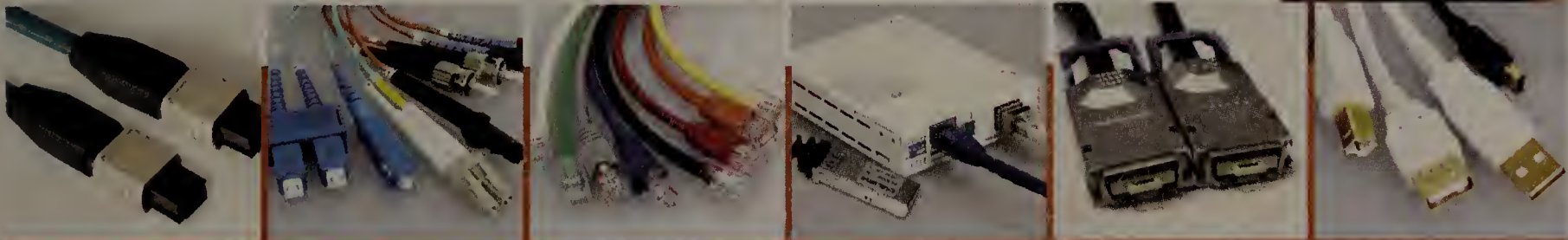
"In the long term, the netbook will be the entry-level of the PC market," Baker says. "As long as they are marketed and sold to people as PCs it is going to be hard to change that mindset. And for a lot of consumers the PC platform is Windows. Despite its flaws, it is something they have been using."

And IDC says consumers will have a major hand in deciding the fate and definition of the netbook. In 2008, 80% of netbooks were purchased by consumers. ■

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## Youth

continued from page 1

Willmer, executive director of Robert Half Technology, an IT staffing and placement firm. "Companies are less concerned about attracting [younger] talent because they're hiring less."

Julian Byron, a 26-year-old Web project manager for a digital publishing company in Washington, D.C., says it would probably be tougher to land his job today than it was a year ago when he was hired because of his age. Now in the hiring seat himself, Byron sees a shift from a year ago when job applicants had more leverage.

"We know as employers that it's tough for applicants to find jobs; I definitely feel more empowered when hiring now than I did before the recession," he says.

This generation is often described as spoiled, having been raised by "helicopter" parents who hovered over their children during their formative years. When companies began bending corporate rules to let employees use their own cell phones and laptops for work, or grant access to social networking sites such as Facebook despite potential security concerns, that stereotype was reinforced.

But despite preconceptions, observers say Gen Yers have a lot to offer a corporation.

"The key word is innovative; Gen Y has shown us the importance of things like social networking and podcasting, so it's not just technology, it's innovation" that this generation brings to a corporation, Robert Half Technology's Willmer says.

At Fortegra Financial, a financial services firm in Jacksonville, Fla., CIO and Vice President Kirk Hale still seeks out Gen Y workers to staff his 27-person IT department, even though there may be more experienced candidates available.

"Even at the help desk level, Gen Y is welcome. They're going to walk in and be excited about supporting iPhones and instant messaging," Hale says. "They speak that language, so across the board [hiring Gen Yers] is a welcome opportunity."



PHOTO: NORTHEASTERN PHOTOGRAPHER CRAIG BAILEY

Read a story online ([www.nwdocfinder.com/9542](http://www.nwdocfinder.com/9542)) on how Northeastern University students work to solve 'real-world' engineering problems.

However, Hale admits this generation can be challenging to manage. For example, Hale has had to hold more frequent performance reviews than the annual one his company has traditionally performed, in order to satisfy younger workers' need for more consistent feedback. "We have to celebrate the little wins more often," he says.

And he has to answer more questions. Gen Y workers are most motivated when they know why they are doing something, Hale says; they want to know what's in it for them, so he's had to become more transparent in his communication.

"But that's helped our company on a much more global basis," he says. "The things we've had to change to accommodate the newer generation is having a much wider and more positive impact on the company." ■

## Five ways Gen Y job seekers can stand out

### Stress comfort with technology, demonstrable skills

**G**eneration Y job candidates have a lot of selling to do these days. Because of the recession, these young workers are competing not only with each other, but also with older, more experienced candidates. Below are a few ways Gen Yers can fill the gaps in their resumes to put them on more equal footing:

- During an interview, shift the conversation away from lack of experience to demonstrable skills. If you were involved in a technology project, even if it was while at a university, during an internship, or as unpaid work for a nonprofit, the skills required to complete the project still count. Focus on the project completed instead of the lack of corporate experience.

- If you don't have demonstrable skills

related to the job you'd like, consider certification. "For IT specifically, lack of experience can often be compensated for with certification," says Julian Byron, Web project manager with a digital publishing company in Washington, D.C. "It's a good investment, specifically if a Gen Yer only had a year or less of [work] experience. Getting certified can really build that up."

- Stress your comfort with change. "Gen Y thrives on change, and there's no denying we're in a period of change with corporate restructuring," says Dave Willmer, executive director of Robert Half Technology, an IT staffing and placement firm. "Gen Y might thrive when a company is doing technology updates, vs. someone more senior who might not."

- Play up your technology skills, especially in new media and social networking. Fortegra Financial, a financial services firm in Jacksonville, Fla., looks for Gen Y job candidates because of their comfort level with new technologies. "They speak that language much more fluently than the traditional or legacy employee," says Kirk Hale, vice president and CIO. "We found it's more expeditious to acquire that talent than to try and develop that talent."

- Network with people in the company or industry you'd like to be in. Many employers will move the resume of a job candidate with a referral from a current employee to the top of the stack.

— CARA GARRETSON



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# Re-perimeterization, Part 2

Application visibility and control enables IT to say 'yes' to the business

BY CHRIS KING

In Part 1 of this article ([www.nwdocfinder.com/9547](http://www.nwdocfinder.com/9547)) we examined how enterprises could gain application visibility and control to accommodate programs hosted outside the enterprise, and where they might implement that.

By deconstructing traffic (detecting and decrypting, decoding and de-tunneling), organizations can deduce what applications are on their networks. That requires being able to see all traffic because applications don't correspond to ports anymore, and to exert control these functions must be done in line. The best place to do this is at the firewall — it sees all traffic, demarcates the trust boundary and can enforce policy. But the traditional enterprise firewall needs a serious overhaul to perform these functions.

On to Part 2. If organizations (and security vendors) can regain application visibility and control the right way, enterprises will realize additional benefits: fine-grained application control, user-based policies and reporting and better content scanning. All of this adds up to the ability to have a more meaningful conversation with the business — focused on enabling applications, users and appropriate content, rather than just saying, "no".

Applications aren't threats. As described in Part 1, controlling applications is simple:

- Block undesirable applications.
- Safely enable good applications.
- Restrict risky application features by policy (even questionable apps may have business value).
- Ensure less important applications don't hurt more important ones.

The above presumes that the network professional knows what each application is, understands its relevance to the business and how it behaves. Each application or class of application has to be examined for benefit/risk. If the application provides high value and little risk, the answer is easy. If the application provides high value and high risk, the answer is harder, and IT must mitigate the risks associated with enabling the application.

The business can articulate the value side of the equation. Network and security professionals must come to the table knowing the risks the application carries:

- Can it carry malware?
- Does it chew up bandwidth?
- Does it tunnel other applications?
- Are there vulnerabilities associated with it?

The main point is that applications need policy control, not the "find it and kill it" mentality

reserved for malicious content.

Beyond that, there is application prioritization. Enterprises should, as part of application control, ensure that necessary applications aren't slowed or squeezed out by acceptable applications.

## Bring users into view

In most enterprises, when talk turns to application use/abuse, the next question is: Who is responsible? Responding with an IP address in today's dynamic environments is useless. If you can see the specific application, you should be able to see the user of that application.

Enterprises have been consolidating users into a centralized directory for years, and many have experienced a degree of success. Why not use that for application control?

The first logical use of user/group information is for reporting purposes, such as who is using (or abusing) that particular application? The second use is more powerful, setting policy by user or group.

Most organizations need to go beyond a global, monolithic policy; there's a need for a finer-grained approach to application enablement. For example, sales and marketing might need to use social networks to market product, or IT might need to use BitTorrent to obtain Linux binaries.

The point is once you have fine-grained visibility and control of applications, you'll need a similar level of granularity of users. There are a few ways of doing this: identification or authentication.

Identification is easier, you're simply tying the application traffic of a logged-in workstation to the user it's logged in with. There are a couple of ways to do this: either sniff the login traffic, or use real-time event data from the enterprise directory. Authentication is significantly harder, requiring secure participation in the authentication scheme (cookies, NTLM, Kerberos), and often necessitating acting as a proxy, which has its own issues.

## High-performance content scanning

Once you have the ability to see and control specific applications by user, what else? How about content scanning? There are three kinds of content organizations are concerned about:

malicious content (threats), sensitive or confidential content (leaks), and nonproductive/inappropriate content. Functions such as intrusion prevention, antivirus and scanning for confidential data can all be lumped into "content scanning."

Traditionally, disparate security appliances provide different aspects of content scanning (unified threat management devices attempt to wrap it all up, but often perform poorly). By deconstructing application traffic you've done a significant portion of the work of content scanning. The major issue with scanning using traditional approaches is that redundant steps impede traffic (deconstruction, scan for exploits — followed by another deconstruction, scan for viruses, followed by another deconstruction, scan for confidential data and so on).

If you insert a single content scanning step into the process of determining the application, you can gain a tremendous amount of security benefit, with very little performance hit. To collapse content scanning like this, however, requires some redesign:

- The ability to deconstruct fully (as described in Part 1), not just the minimum needed for one type of content scanning.
- The idea of collapsing content scanning suggests a single engine, and the enterprise requirement for high performance dictates a stream-based engine.
- A consolidated signature format across the various types of content you're scanning for (exploits, malware, confidential data).

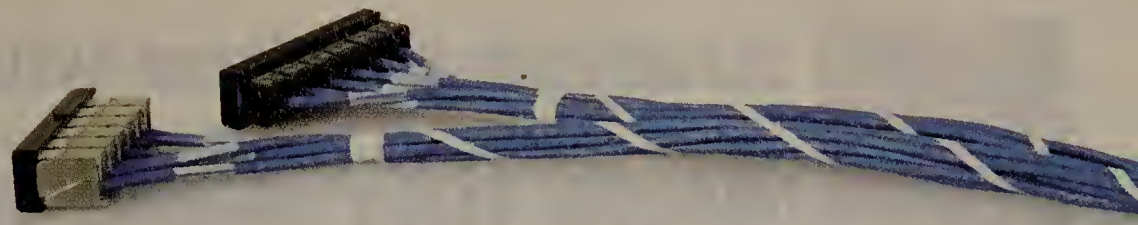
The result is high-performance content scanning. It isn't perfect (buffer-based scanning can sometimes do a more thorough job at the cost of introducing significant latency), but it can perform well if implemented correctly.

By doing application visibility and control correctly, enterprise network and security professionals have an opportunity to do something that's previously proven elusive. By approaching the business with application- and user-based policies, and scanning content without slowing down application traffic, network security can start being viewed as a business enabler, rather than a business impediment.

*King is director of product marketing for Palo Alto Networks. He can be reached at [cking@paloaltonetworks.com](mailto:cking@paloaltonetworks.com).*

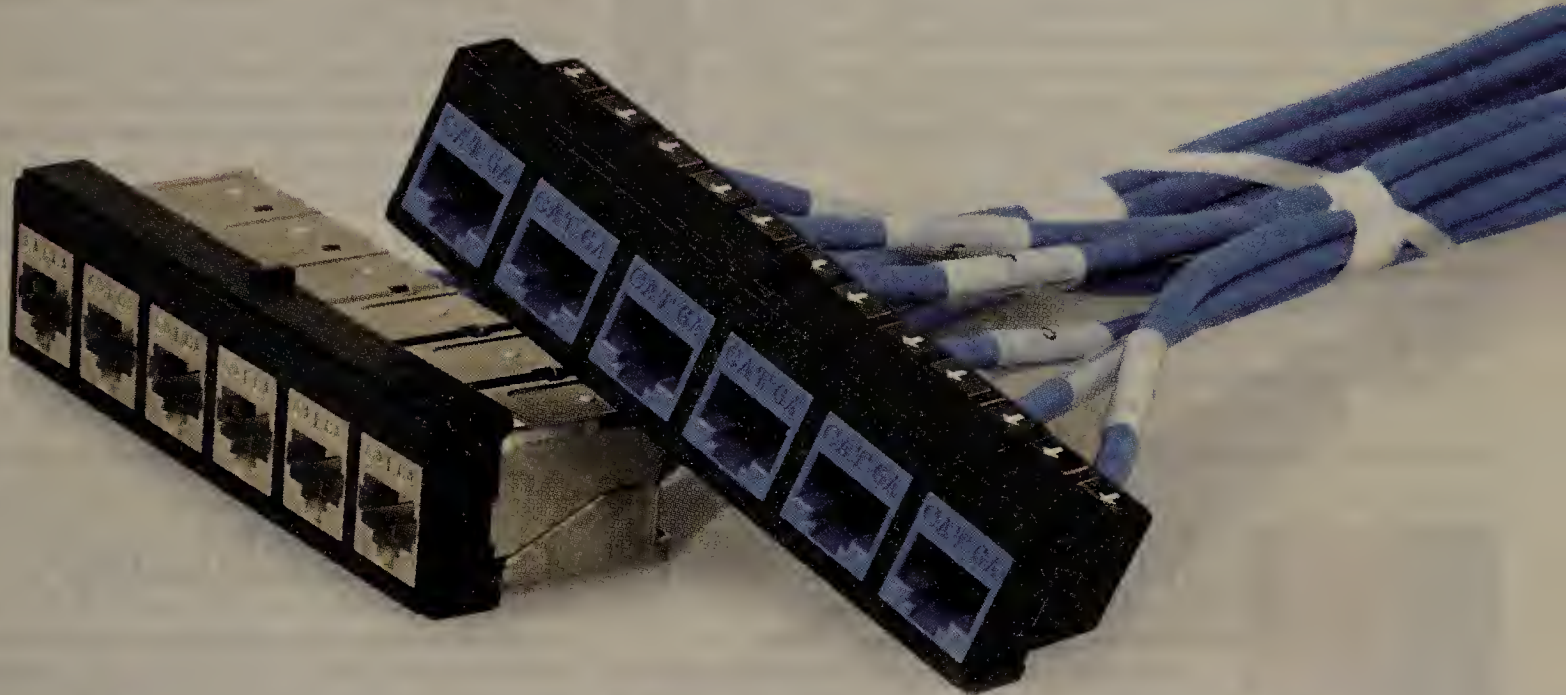
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## GEARHEAD

Mark Gibbs

# Analyzing Twitter with Excel, Part 2

**S**o, last week I set myself a problem: Use Microsoft Excel to capture Twitter messages that mention the word “rovio”, pretending that I worked for the company that makes the Rovio Wi-Fi-controlled camera and I wanted to see what people were saying about it.

I set this all up to demonstrate Excel’s XML Maps feature. The concept was to define an XML Map that retrieved XML data from Twitter’s search feature. This feature offers to generate for your queries a news syndication feed in Atom format. This is, in theory, great as Atom is a format that Excel understands. But I discovered it didn’t work as I had expected.

If you recall, the feed URL as provided by Twitter was: <http://search.twitter.com/search.atom?q=+rovio+since%3A2009-03-01+until%3A2009-03-25>. I modified this as Excel didn’t want anything to do with it (the error reporting in XML Maps is, to say the least, poor).

I found that by replacing the ‘+’s (which stand for spaces in a URL encoded string) with ‘&’s (which separate variable/value pairs in HTTP GET requests) Excel would create an XML Map. I also added other arguments to set the number of results per page and which page of the results should be returned and this is what I wound up with:

<http://search.twitter.com/search.atom?q=rovio&since%3A2009-02-01&until%3A2009-03-24&rpp=50&page=1>

Unfortunately this only appeared to work when used in Excel. The Twitter search just ignored everything after the first ‘&’ and returned the last results available for the given search.

What this comes down to is four issues: The Twitter search interface is poorly documented; the Atom version of the search doesn’t support all of the additional arguments; Excel is too fussy about which URLs it is

willing to interrogate; and Excel also gives you precious little information about what it doesn’t like.

This is all very annoying because I’ve used Excel XML Maps with all sorts of XML sources before and never had problems like these. I now hate both the Twitter and the Excel developers with a passion.

So I still want to use Excel because it allows me to create summaries, pivot tables and graphs, but it looks like using XML Maps to get the data directly isn’t going to work.

Here’s an idea: Let’s use cURL to retrieve the raw XML rather than relying on the vagaries of what Excel might or might not consider acceptable. And that’s just what I’ll do next week when I have enough space to wax lyrical on the topic.

But to close this week I want to go back to a column I wrote about SAP’s Xcelsius. Xcelsius is a dashboard development tool that ingests an Excel spreadsheet and lets you attach graphical meters, sliders and graphs to the underlying data and generate a Flash movie that can be used on Web pages.

In that piece I noted how SAP had added a ton of features to the 4.5 version of Xcelsius but threw out stability, reduced usability and apparently considered documentation to be optional. The phrase “epic fail” came to mind. Since then SAP has released a number of updates, the most recent being Xcelsius 2008’s Fix Pack 3.

Having beaten this update to death I conclude the following: Stability is much improved, bugginess has been reduced but is still a problem, usability is slightly better but still has an engineering feel, and documentation and error messages are still abysmal. That said, Xcelsius 2008 is somewhat improved and gets a score of 3.5 out of 5.

*Gibbs is cruel to software in Ventura, Calif. Your thoughts on software torture to [gearhead@gibbs.com](mailto:gearhead@gibbs.com).*



Keith Shaw

## COOLTOOLS

# Monkeying around with chi.mp

**The scoop:** chi.mp free account.

**What it is:** Like many social networks, a chi.mp account gives you your own “Web space”, letting you post status updates and photos, and link to other social networks or Web feeds. Chi.mp gives users a unique domain name (mine is <http://keithshaw.mp>, for example), an OpenID and Web site.

The chi.mp service also has a contact aggregator, pulling in contacts or “friends” from all of your other networks and contact databases.

Finally, the service lets you create multiple “persona” profiles that are displayed to designated contacts. For example, users can create a public site, a professional site that you display to colleagues, and a friends/family site. For instance, family and friends can see photos of your kids, while professionals and the public see nothing. And truly special friends can see your spring break photos, while mom and dad see nothing.

**Why it’s cool:** The growth of social networking in the business world has created the problem of “Who am I?” for many users. For example, do the posts on my Facebook or Twitter page represent my thoughts as a *Network World* employee or my thoughts as Keith Shaw, the brand? My friends from high school and college have no interest in my thoughts on the latest gadget, but I’m also sure that *Network World* “friends” don’t want to see photos of me from my college days. Allowing for separate personalities makes chi.mp an intriguing option.

Other social networks are like the equivalent of a country club —

when you see my Facebook page, it’s like we’re in the lobby of the Facebook Club. When you’re visiting my chi.mp page, it’s like you’re in visiting my home or office — you see what I want you to see, based on your relationship with me. Furthermore, friends can hang with me in the living room, but only family members can use the upstairs bathroom.

Users can customize their sites with different themes, backgrounds and avatar choices, as well as link to a number of different social networks. In this regard, the service is a lot like FriendFeed.

Social media gurus and individuals who are creating their own social brand should love this site, as it gives them a central location and an easy Web address to give out to all their contacts.

**Some caveats:** Managing the different persona pages, choosing which of your friends goes with which persona, and which feeds or photos you put on each page, can quickly get daunting. With hundreds of contacts or more, doing the work of choosing designations could be like trying to weed down a wedding invitation list.

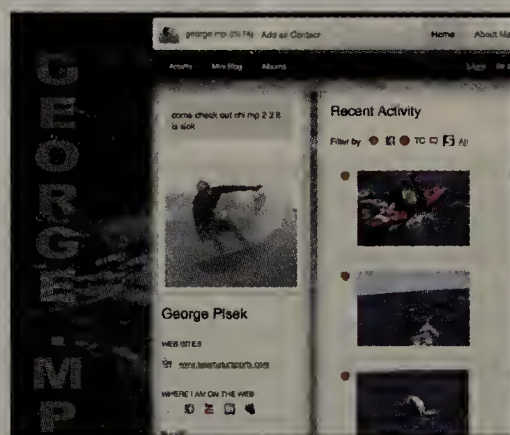
Also, the early version of the service seems to be geared toward users of multiple social networks.

Bottom line: If you’re juggling a lot of different social networks, contacts and are starting to feel that

you really have multiple personalities, head to <http://chi.mp> and create your own social hub to manage them all.

**Grade:** ★★★★★ (out of five)

Shaw can be reached at [kshaw@nww.com](mailto:kshaw@nww.com), on Twitter (<http://twitter.com/shawkeith>) or through his chi.mp site (<http://keithshaw.mp>).



**Chi.mp is a service that allows you to differentiate your personalities in the social networking world.**



## Cross-platform tools fall short

CA comes out on top in four-product test, but there's room for improvement

BY TOM HENDERSON AND BRENDAN ALLEN,  
NETWORK WORLD LAB ALLIANCE

**W**ith the abundance of formidable virtualization platforms on the market today, there ought to be a better way to manage heterogeneous virtual machine farms. But the bad news is that after comparing four packages whose makers say they do just that, we're still looking for an easier way out of cross-platform virtualization management hell.

The VM management packages we tested fell into two categories: additions to existing systems management platforms, and newer stand-alone packages. Microsoft's Systems Center Virtual Machine Manager (SCVMM) and CA's Unicenter-based Network & Systems Management (NSM) with Advanced Systems Management (ASM) fell into the former; while Insystek's TotalView and DynamicOps Virtual Resource Manager (VRM) fell into the latter.

The products varied wildly in their approach to the problem and each fell down in its own places.

- Microsoft's SCVMM did well for Windows VM guests, and could get a grip on VMware's ESX platform — but only if VMware's expensive VirtualCenter was also installed. SCVMM required Microsoft's Operations Manager to provide life-cycle management, but integrating and patching everything together into a working system proved difficult.

- Likewise CA's graft of ASM and NSM onto our test network was very difficult. NSM is a powerful, innately heterogeneous management package, and it could produce lots of data regarding our VM farm test simulation, but it stopped short in a number of areas including building and versioning VMs and discovering existing VM infrastructure.

- DynamicOps VRM was more of a VM library manager or provisioning rather than a full-fledged management package. It also was difficult to integrate, and lacked key features required for monitoring and managing VM infrastructure.

- Insystek's TotalView possesses all the characteristics of a work in progress. There was lots of promise for things such as policy-based management, but TotalView crashed, had problems with its admittedly brand-new Hyper-V support, and was a source of intense deployment frustration.

### Goals and test environment

Each management package had to work with two or more hypervisor platforms picked from a list consisting of VMware's ESX 3.5, Microsoft's Hyper-V and/or Citrix's Xenserver 5.0. We installed these hypervisors on a variety of hardware platforms (see How we did it, [www.nwdcfind.com/9521](http://www.nwdcfind.com/9521)). And we installed the products under test on vendor-recommended hardware and pointed them at VMs running across the multiple hypervisor hosting platforms supported by each.

Each VM management product was tested in five areas important to VM farm administrators:

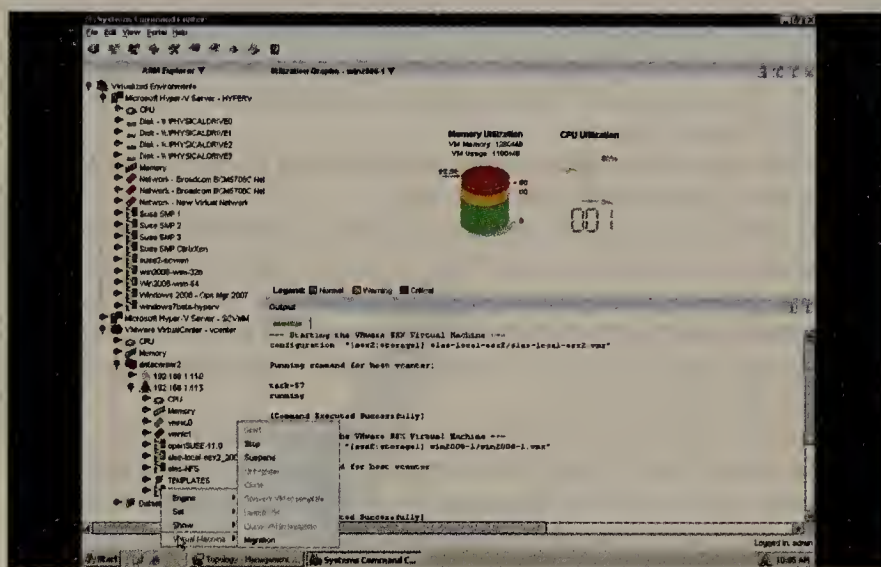
- Release management (building and provisioning) for VM deployments comprising at least two different hypervisor platforms.

- Moving, adding and changing VM instances (life-cycle management) for VM deployments comprising at least two different hypervisor platforms.

- Operational management as facilitated by administrative and user roles using at least two different hypervisor platforms.

- Incident and troubles management consisting of monitoring, alarms, audit, and reports across multiple virtual host platforms.

- Security management for accessibility to VM instances, host operating environments, and applications across multiple host platforms.



**CA's System Command Center user interface offers access to the strongest cross-platform management feature set tested, but that comes at a considerable configuration price.**

### The CA option

Of the products we compared, CA's NSM/ASM pairing served up the best combination of VM management components. But it wasn't problem free.

NSM provides the base systems management infrastructure, while the ASM piece serves up the virtualization and cluster management wares. CA's virtualization management support for VMware's VirtualCenter/ESX and Hyper-V is only one aspect of the package used to manage large networks of systems. But for our purposes, we limited the scope of testing to the virtualization components only.

We set up NSM/ASM to run on a Windows 2003 Server R2 machine (it can also run on a Unix server) with a SQL Server 2005 server using mixed-mode authentication.

As for the physical resources necessary, CA recommends 4GB of memory and at least 20GB of hard drive space in total. For CPU, minimum requirements are 2GHz Pentium 4 or AMD Athlon XP 2000+. We then had to install NSM and ASM management and performance agents on each machine and also ASM virtual agents for it to work with Hyper-V or VirtualCenter host machines we wanted to manage.

CA recommended that we download a best practices utility, which should have enabled us to install NSM and ASM together but the installer utility would not run. CA technical support walked us through a manual install that took four hours. When installing NSM, we had to select things such as Management Database, Agent Technologies, WorldView (a visual representation of the network showing all machines and devices connected to the network), Enterprise Management, Notification Services, Configuration Manager and Web Reporting options.

To get the CA combination to discover our VMware VMs, we had to use the command line to point the management system in their directions. To connect to the VirtualCenter host machine, we had to configure some text files manually for CA's distributed intelligence analysis engine, which uniformly retrieves information from all managed devices.

We did notice that NSM/ASM was a bit sporadic about rediscovering VMware VMs. For example, a cold reboot of a VMware instance was not displayed in the CA GUI. Other times, we needed to stop and start some of the NSM/ASM services on the VirtualCenter host machine in order for



# CLEAR CHOICE TEST VIRTUALIZATION MANAGEMENT

the NSM/ASM services to collect the data from it.

According to CA tech support, we needed to set up an SNMP trap on the VirtualCenter host machine so that NSM would rediscover VMware VMs after we'd shut them down and restarted them. But even after we set the SNMP trap, when we were checking out performance monitoring, there was a similar problem where we had to stop the performance agent on the VirtualCenter-based machine and start it again. The use of SNMP in this case could also open up the installation to known security issues surrounding SNMP and community naming strings.

The overall VM discovery and connection process was similar for the Hyper-V VMs, except we had to apply a support patch first, and then install the Hyper-V agent.

With the arduous installation process behind us, we were able to view quite a bit of information about the VMs.

There were three main GUI components: the main NSM GUI called the Management Command Center from where we controlled the underlying management infrastructure; the main ASM GUI called the Systems Command Center from where we managed our VMs; and the NSM Performance Scope GUI from where we peered into statistics collected about all managed servers.

Each uses a three-pane view. There was a narrow tree-hierarchy on the left side of each that allowed us to dig down into the VM environment.

We were able to do all the usual VM controlling commands, such as start, stop and shutdown; suspend, clone and make template

from the Systems Command Center tool. CA's VM management and monitoring capabilities don't extend beyond what you can do with in each VM environment, and those controls vary by hypervisor (such as HyperV commands are slightly different from the VirtualCenter commands).

The one task we were not able to do inside of CA's interface was create a new VM from scratch in either the VMware or Microsoft hypervisor environments. To create a new VM, we had to clone another VM or use an existing template.

Cloning and migrating VMs are simple processes with CA's offering. For cloning, we clicked both the VM we wanted to clone and the cloning option. A dropdown menu allowed us to add some details about the VM including name, storage location and host (even though we had to keep the same host, because choosing another one brought on failure of the process). You complete a similar process when migrating VMware VMs, except you need to choose the host to which the VM is to be moved.

A VM Library feature that could be used to deploy subsequent images and work out some VM vetting processes — things like production proofs — are not yet part of the CA offering.

## Operational management

We found ASM's administrative and user roles capabilities to be quite advanced. ASM does not rely on Active Directory so we had to create

See Virtualization, page 24

## NETRESULTS

Product	NSM/ASM	DynamicOps VRM	TotalView 1.2	System Center Virtual Machine Manager
Vendor	Computer Associates www.ca.com	DyanmicOps www.dynamicops.com	Insystek www.insystek.com	Microsoft www.microsoft.com
Price	\$4,000 plus costs for managed resources, servers and sockets	\$1,500 per managed processor socket	\$199 per CPU socket for VMWare ESXi and VMWare server; \$699 per CPU socket for VMWare ESX and Citrix Enterprise Server	\$869; Microsoft Operations Manager (required for trending/alerts) \$579
Pros	Nice user roles and policies-based management; provides great VM monitoring information; offers good heterogeneous VM control capability.	Easily imports VMs already running under VMware VirtualCenter; good Web-based GUI, good reports.	Easy installation, can create new VMs from scratch.	Can create VMs from scratch, PRO tips trending useful for life-cycle management.
Cons	Incredibly complex; can't create new VMs from scratch; data refreshes were sporadic; complicated documentation.	WIM imaging process is hit and miss — and only works with Windows; weak VM discovery processes; weak documentation.	Unstable, some features didn't work well.	Can't use dynamic disks for ESX VMs when creating from scratch; lacking in real-time monitoring.
Score	3.08	2.45	2.01	2.98

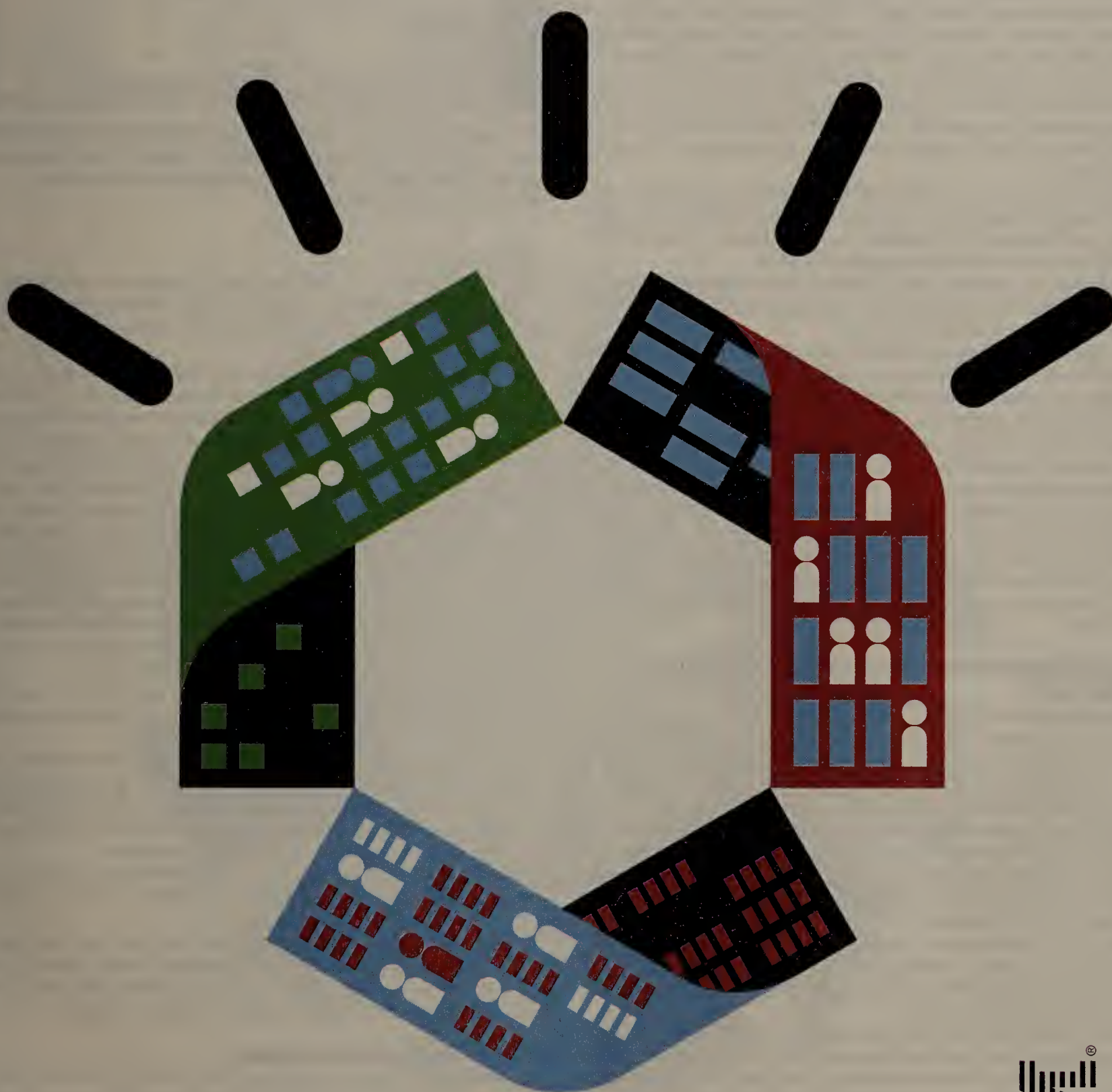
## SCORECARD

Action	Release mgmt.	Moves, adds, changes	Operational mgmt.	Incident mgmt.	Security mgmt.	Installation, integration and ease of use	Total
Weighting	15%	15%	15%	15%	15%	25%	
CA NSM/ASM	3.50	3.50	3.50	4.0	3.50	1.50	3.08
Microsoft SCVMM	3.50	3.50	3.50	3.00	3.00	2.00	2.98
DynamicOps VRM	3.50	2.00	3.00	3.00	1.50	2.00	2.45
Insystek TotalView	2.00	2.50	2.50	2.00	1.50	2.00	2.01

Scoring key: 5: Exceptional; 4: Very good; 3: Average; 2: Below average; 1: Subpar or not available.



By 2011 there will be 2 billion people  
and 1 trillion connected objects on the Web.  
A smarter planet needs smarter IT.  
Let's build a smarter planet.  
**ibm.com**/connected



THINK 



# CLEAR CHOICE TEST VIRTUALIZATION MANAGEMENT

## Virtualization

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our own roles and users manually. (Although, it was possible to use Active Directory with security management part of NSM.) There are two default roles provided: admin (who can do anything) and viewer (who can just look).

If you don't like the ones offered, you can roll your own roles and the options are limitless. In each instance where we built our own custom role, we were able to specify exactly what roles were permitted to carry out which VM management tasks and have access to which VMs.

The monitoring and alerting functionality requires that a specific performance agent be installed on the host machine running VMware's VirtualCenter, but there is no additional agent needed for Hyper-V. The setup is quite complicated, but once we tackled that with the help of tech support, we could monitor many performance metrics such as VM disk and memory size, reads per second and network connections per second. We could also configure how often the information is updated in the CA GUI.

We were able to set up a threshold for the percentage of CPU usage and set some actions (via a command-line programming) to be taken should the threshold be exceeded for VMs running under VMware VirtualCenter and successfully triggered the alarm.

The reactive measures that can be taken should a threshold be broken include running other applications, popping up an alert, triggering a sound and sending a notation to a log.

As for Hyper-V VMs, we were able to view some performance data from Hyper-V, but not all metrics (such as CPU or RAM usage). Some of the ones we could view included network connections per second and the Hyper-V VM health summary.

Security gets more direct attention in NSM/ASM than the other products we tested, including the aforementioned definable user roles. There is also a security management component within NSM, even though it is not specifically targeted toward its virtualization management components. With NSM security management, we were able to lock down parts of NSM. There were different assets permission, asset groups and user groups available to create a secure environment. With these assets, we could control access to the NSM/ASM consoles and commands available to them.

## Microsoft Systems Center — Virtual Machine Manager (SCVMM) 2008

The final version of SCVMM — which began shipping in November — is much improved over the beta code we tested last fall ([www.nwdocfinder.com/9522](http://www.nwdocfinder.com/9522)), but it still has some rough patches in terms of integration with Microsoft's Operations Manager (needed for monitoring and trending) and supporting non-Windows VMs.

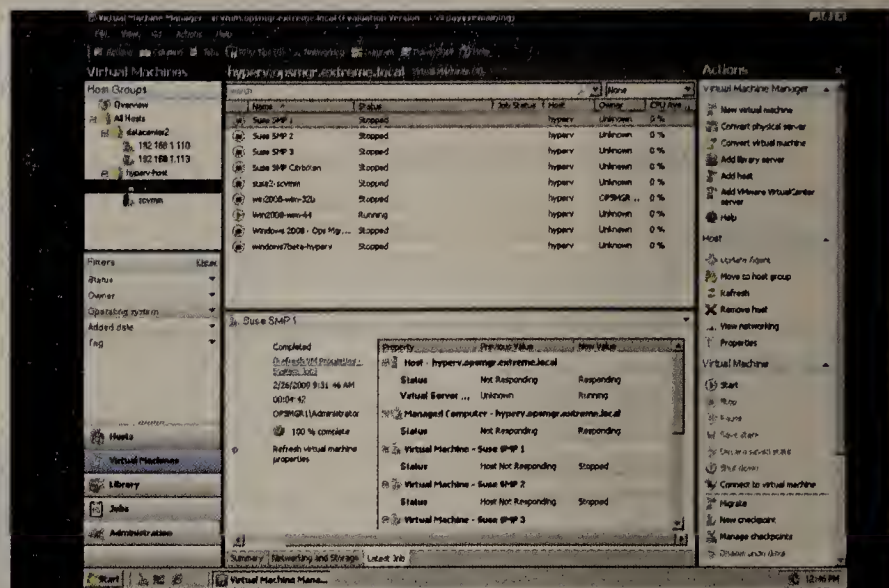
SCVMM now conveniently manages VMware's ESX-based VMs, but that support requires that VMware's own VirtualCenter management application (which VMware charges for) already be in place to perform much of the actual work when managing ESX VMs. This condition exists for other products tested as well.

Hosting SC VMM requires hardware resources that depend on how many hosts you plan to install. Each machine that runs the SCVMM management console needs at least a 2GHz x64 processor, 2GB of memory and 10GB of hard disk space.

Windows 2008 Server is required as well. You also need to deploy (on a separate machine if you like) Microsoft Operations Manager (MOM) 2007, a prerequisite for the Performance and Resource Optimization (PRO) tips tool that handles monitoring, alerting and trending tasks. The list of other required Microsoft piece parts includes Windows PowerShell 1.0+, Windows Remote Management, WAIK 1.1 and IIS 7.0.

Using SC VMM to initially make a VM image instance wasn't easy or intuitive.

When we tried to make a new VM on the VMware ESX using SC VMM we wanted to use dynamic disk VMs, but we could only select



**Microsoft's Systems Center Virtual Machine Manager, while technically able to manage VMware-based VMs, still puts its best foot forward when managing the life-cycle Windows-based VMs.**

fixed-sized disks.

Using its GUI, we tried to add standard ISO images of operating systems that would serve as image sources in our SCVMM image library. But it's not obvious how to do this, so we manually copied and moved images into the required folder.

We wanted to use an ISO image to initially install a guest VM onto Hyper-V. We set up the guest and chose Novell's SLES 10.2 (64-bit) as the operating system to run on the Hyper-V host. We chose the ISO image we had manually added to the library. We didn't want to copy the ISO image so we chose: 'Share image file instead of copying it'. But this gave us an inarticulate error message, telling us in a roundabout way that the machine requesting the image did not have proper access rights. Eventually, the problems were solved with a change in file/folder permissions. But it was no mean feat to get the Library function to work.

When we initially attempted to migrate VMs between Hyper-V hosts we got an error message advising us of processor incompatibility issues. The only way to perform a cross-CPU migration with SCVMM is to shut the VM down, copy the image file, then restart it elsewhere. Why would you want to use this function in a shut down VM, when this action is no different than taking a snapshot and reloading it as a VM? This means additional downtime is required to complete a very simple and ostensibly common act of migration.

It would have been nice to move or copy an ESX VM to Hyper-V or vice versa, but that option is not offered here. (None of the other management tools can do this either, though.) We were able to clone ESX VMs onto the same VMware host and complete an ESX VM to ESX VM migration with local storage or an network file system share.

Using VMware's live VM migration utility, VMotion, migrations of live VMware ESX to ESX VM guests under SCVMM's control worked quite well.

Whether the VMware VMs used Linux or Windows, the VMs were able to successfully migrate, although we found the VM was slow to connect to the viewer subsequently (and we had to close the VM viewer session and open a new one because it was on a different server).

## SCVMM's operational management

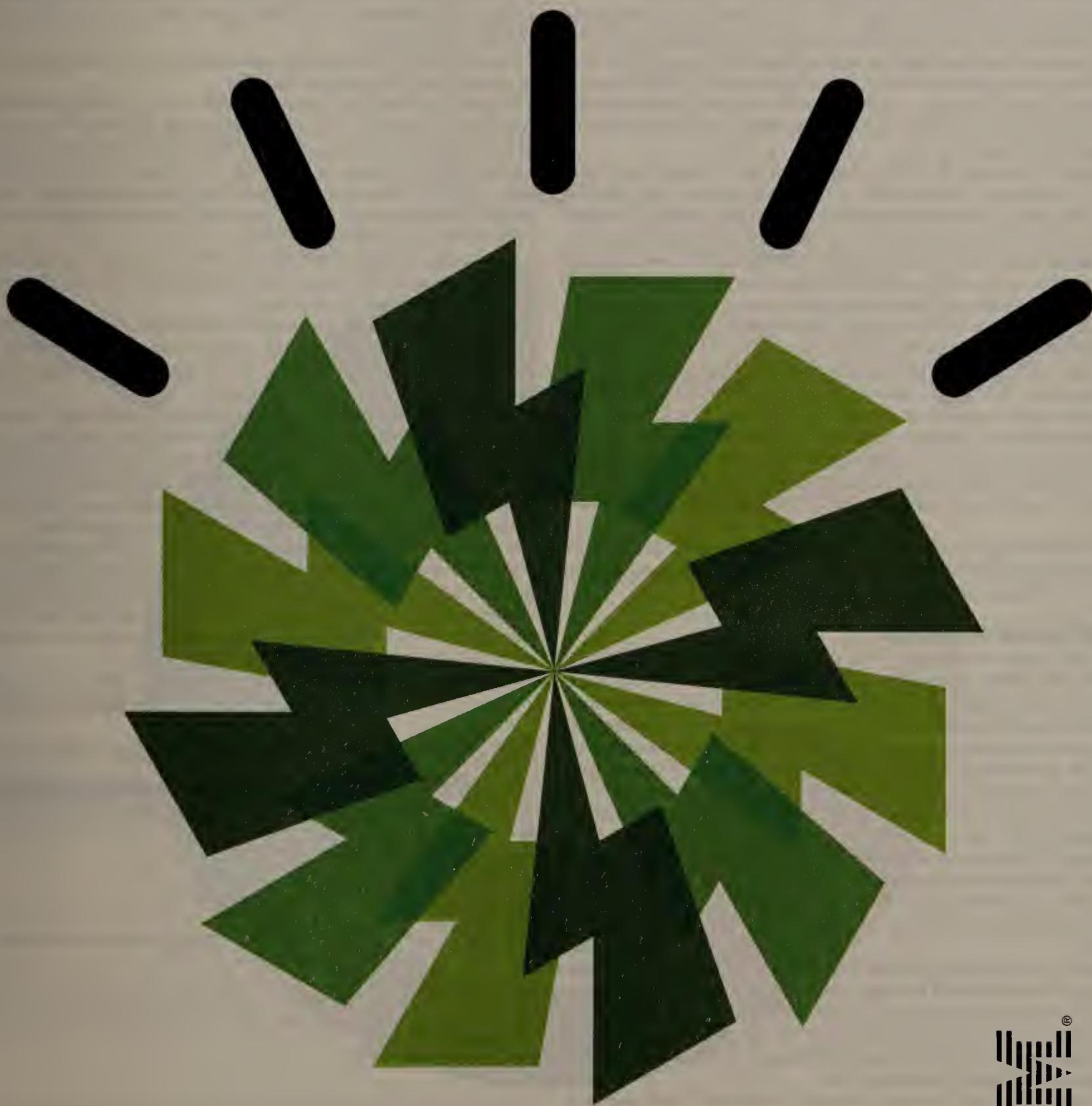
The first step toward achieving any form of daily operational management is being able to actually see the various VM platforms on the network. Under SCVMM, getting to 'watch' the various VM hypervisor screens was possible, but the quality was not great.

The SCVMM VM viewer uses a separate window from the main GUI (a plug-in is required to see VMware VMs). Unfortunately, the options available from within the viewer itself are limited. You can reconnect to host,

**See Virtualization, page 26**



It's estimated that the world's datacenters  
will produce more carbon in a year than the  
total electricity usage of 36 million homes.  
A greener planet needs smarter IT.  
Let's build a smarter planet.  
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THINK 



# CLEAR CHOICE TEST VIRTUALIZATION MANAGEMENT

## Virtualization

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send ctrl-alt-delete commands, and use all of the real estate of the monitor. There are no start/stop, shutdown or pause buttons available from the viewer.

Every time we clicked inside to give focus to the viewer while installing a VM, it would pop up with the message, "You can't control the mouse while running a remote session without virtual tools installed." This was very annoying because when we installed a SLES VM onto a Hyper-V server, we couldn't even use the mouse, and still had trouble using the VM afterwards trying to install the Hyper-V Linux components.

While working with ESX machines, we could not turn them off remotely, as is possible with ESX Infrastructure Client (like shutdown, reboot or enter maintenance mode for the physical machine). Secondly, we were not able to use templates created in ESX within the SC VMM interface. Therefore, it is still necessary to use VMware's client for certain tasks, and we wondered why we would use SCVMM when we had to reference VMware's utilities anyway.

Besides the primary SC VMM administrator role, there are two other roles — a delegated administrative role, and a self-service user role. The user and group management scheme uses existing Active Directory roles, so there is no need to create new ones. We just assign those users VM management duties from within the SC VMM GUI. We were also able to restrict the actions users could perform on the VM using self-service users role establishment. The available actions are start, stop, checkpoint (similar to the snapshot feature with other tools), remote desktop control, pause/resume, shutdown and remove.

You can place deeper restrictions on VMs if you tap into the concept of host groups. This allows users to create new VMs, setting a quota of how many can be created or if users can store them in the library.

As an example, we created a self-service user role that was restricted to start and stop privileges only on our Hyper-V hosts. Then we added some users to this role. Those users could not interact with the ESX servers at all, were only able to start or stop Hyper-V VMs and could not create new VMs.

As for the delegated admin role, it is quite similar to the full administrator role except that we could specify a certain library or host group for them to administer.

## SC VMM Incident Management

We had trouble configuring PRO tips. Integrating it with MOM and SCVMM was unreasonably difficult. We were able to get PRO tips working on a per-host basis and were eventually able to get VMs to report errors on a per-VM basis, but only for Windows VMs, not for Linux ones.

The alarms take quite a while to show up also in the management interface. According to a Microsoft tech person, PRO tips works by gathering data over a period of time. Therefore the updating process could take six hours to a couple days. A real-time monitoring system for alarm conditions, this is not.

Instead, PRO tips works as a reasonable heuristics system for monitoring VM conditions and making recommendations about how to proceed based on criteria we set. We can't recommend it for larger installations, and certainly not for those installations that have non-Windows VM guests.

In order for PRO tips to pull data from specific VMs and their host platforms, you have to install the appropriate agent software. These agents are only available for Windows environments. We had to install agents on each Hyper-V host and each individual VM. For the ESX platform, we installed an agent on ESX Windows VMs. Microsoft does not yet offer PRO tips agent software for Linux-based VMs.

The reports are useful, but only for trend analysis and audit purposes, as data discovery isn't really trigger-based, but rather, trend-based. For those looking for trend analysis, the PRO tips reports were the best of the products tested this round.

There doesn't seem to be anything inherent in SCVMM that makes it more secure other than the role-based management capabilities out-

lined above. In reality, SCVMM uses whatever security policies are set up in the Windows Active Directory domain.

## DynamicOps Virtual Resource Management (VRM)

DynamicOps describes its VRM tool as a "unified approach to managing both server and desktop virtualization" regardless of the hypervisor platform.

But we found that VRM is more of a provisioning tool for deploying and controlling access to VMs, and is less effective when it comes to the subsequent management of the successfully installed VMs.

Also, not all hypervisors are equal in terms of VRM's ability to control and manipulate VMs running on top of them. VMware-based VMs are definitely more malleable under VRM's control than instances running atop Hyper-V and XenServer.

Generally, there were more manual steps to use the DynamicOps tools to control non VMware-grounded VMs.

DynamicOps VRM (we mainly tested Version 3.1.0 except for when the company supplied 3.1.1 to address issues we had with Windows 2008 Server support of Windows Imaging Format [WIM] imaging needed to support Hyper-V) must be installed on a 32-bit version of Windows Server 2003 R2. We were able to install it inside an appropriate Windows 2003 R2 VM without issue. The program needs access to at least two CPUs, 2GB of RAM and 40GB of disk space.

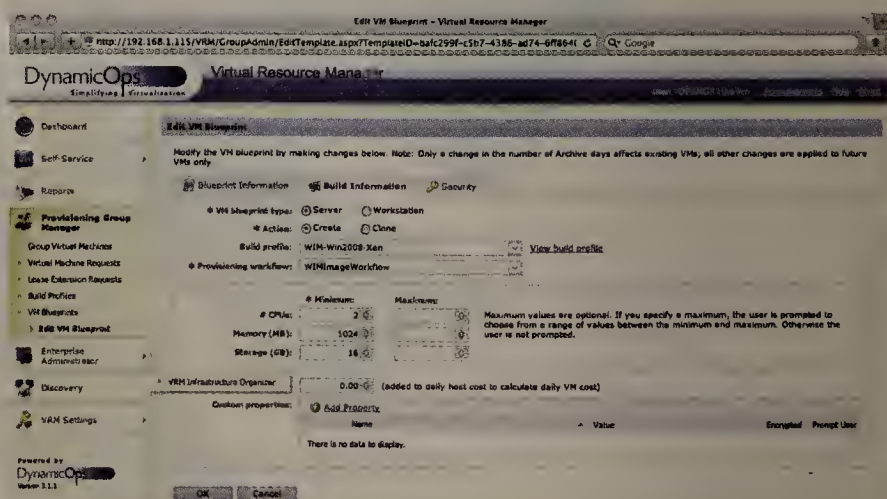
It also needs a database. We tested it with SQL Server Express 2005, but it also works with SQL Server 2005. Microsoft .Net 3.5 and Microsoft IIS 6.0 with ASP.NET are also required.

The supported virtual environments are XenServer 5 or later, VMware ESX 2.5 or later with VirtualCenter 2 or later included, and Hyper-V 1.0. It was necessary to install proxy agents for each kind of virtual environment that we had deployed in the test bed.

The default installation was not complicated. Configuring the product did require a careful reading of the manual. But the upgrade to Version 3.1.1 was an error-ridden process. For example, some user-based data did not correctly transfer during the upgrade. We had to add those manually to the database. A DynamicOps spokesperson said these database problems we incurred ought to be fixed by the time you read this.

In our initial test with VMware ESX, we had to enter information for many different configuration settings such as blueprints, provisioning groups, cost profiles and VM name prefixes before we were able to add our VirtualCenter information and import our guests into the VRM console. Then, we were able to start and stop the machines that were imported by using the VRM Infrastructure Organizer tool.

When we tested VRM with XenServer, we had to add XenServer information. **See Virtualization, page 28**



DynamicOps uses the concept of building blueprints for its VM library. All new VMs are subsequently provisioned pretty well from within that library, but ongoing management of them is still a work in progress.

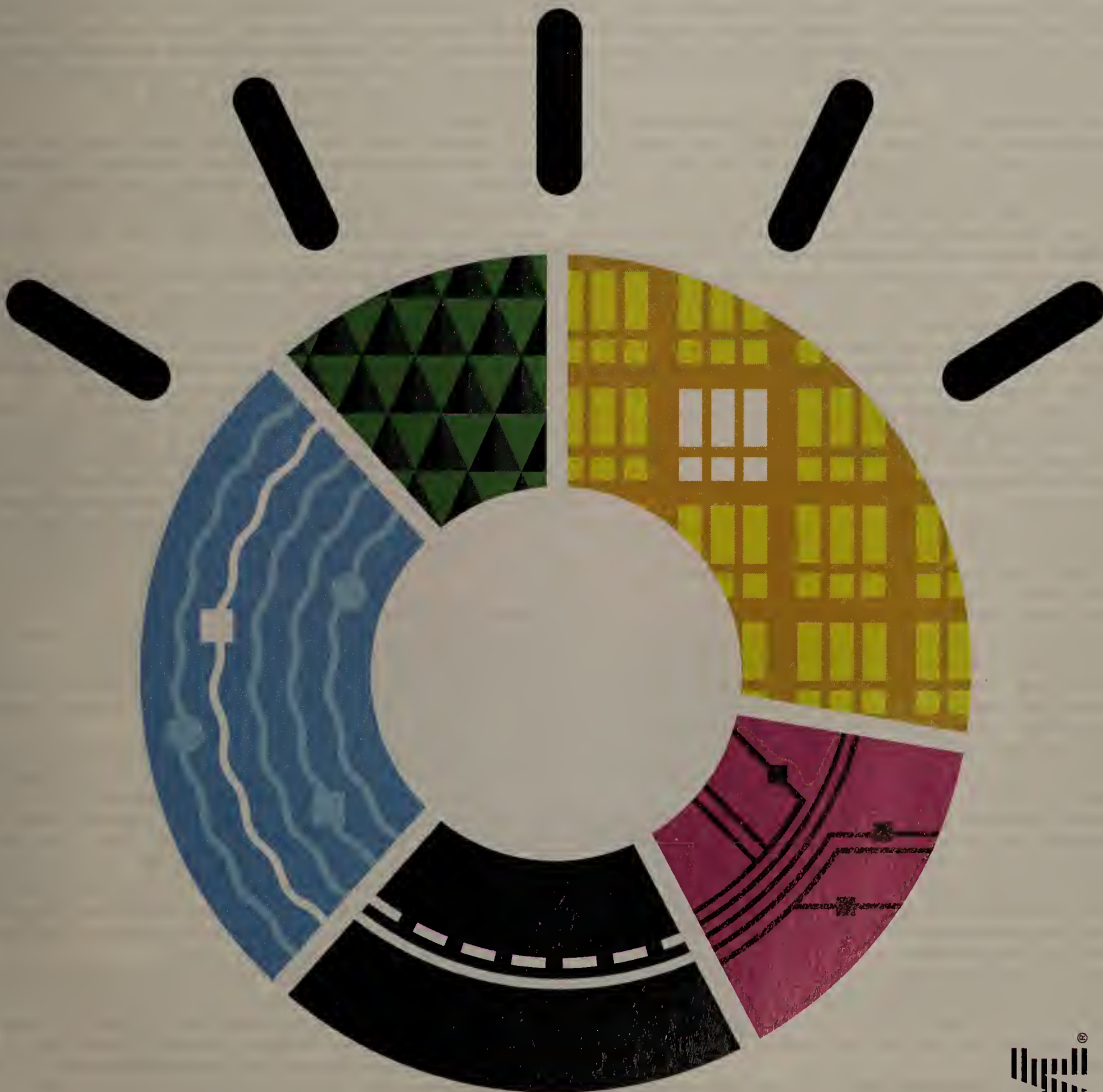


Up to 85% of computing  
capacity sits idle in  
distributed environments.

A smarter planet needs  
smarter infrastructure.

Let's build a smarter planet.

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# CLEAR CHOICE TEST VIRTUALIZATION MANAGEMENT

## Virtualization

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mation manually, first adding the host in the hosts category, then creating a reservation to make sure there is enough storage and CPU, then assigning the reservation to the host. After that, we could finally add a VM by entering in the details about each VM.

This process could become very tedious if you had many Xen-based VMs. A rudimentary discovery process in the application would grease this application mightily. DynamicOps representatives said the Infrastructure Organizer should be able to handle XenServer and Hyper-V environments in the next major release (3.2) of VRM.

Creating VMs from scratch from within the VRM infrastructure is not possible. It's only possible to copy an existing blueprint, which are forms we filled in with various desired settings after which we could provision VMs. The requested VMs were created in the same storage location that was set in the reservation.

We had some VMs on local storage and some on shared storage. When the blueprints were used to create a new VM, that VM was created in the same location (either local or shared folders). We were able to set parameters within the blueprint regarding whether the VM needed permission to clone itself. And depending on the user group that we had defined, our user role allowed us to get specific blueprints, where we were allowed to get them. Then a group leader (or VRM administrator) had to approve our request to provision a new VM. The approval process is a good security measure that we did not see in other products.

The blueprint process gives fine control for replicating VM templates, but is a tedious process. You can create blueprints for all kinds of VMs on all hypervisor platforms. But creating blueprints requires carefully going through the documentation to make sure each setting was correct for the desired VM on the desired platform. Generally the data entered in our test was similar but some fields were required for VMware that weren't required for others. So when we wanted to create a blueprint for Windows 2008 Server, we needed to create three blueprints — one for each environment.

Setting up the blueprint to clone a VM was pretty difficult because the documentation was not clear and every setting had to be entered manually. VMware VirtualCenter has specific clone-time attributes needed to be set within the blueprint. For example, the setting "VMware.VirtualCenter.OperatingSystem" was the one that gave us the most trouble. If DynamicOps had this information in the docs or a link to a list of values that go here, the process would have been simpler.

DynamicOps recommends using WIM for all cloning purposes. WIM is a file-based disk image format that can be used to deploy Windows-based machines or in this case VMs. But this way of cloning only works with Windows-based VMs and it does not work with Windows 2008 x64 at this moment. We could only import Linux VMs or clone them via the VMware clone method.

DynamicOps implementation of WIM Imaging was error-prone and the documentation was unclear, quirky and sometimes wrong on how to properly use the product. For example, when creating the WIM image for Windows 2008, which should be a relatively simple process, we had to create an unattend.xml file to be read by Sysprep (a Microsoft command that prepares a system for virtualization from physical to virtual conversion) to configure certain items like license keys and admin passwords. The manual also described a number of laborious WIM imaging choices, which could have easily been re-made into templates.

Seeing as you can create both Windows and Linux VM clones using VirtualCenter alone, we don't see the benefit of jumping through the WIM Imaging hoops.

When we created provisioning groups — where you establish which users play which roles and belong to which groups — we also set up

resources for each group.

You can import your existing VMs from VMware only. VRM seems to be mostly for setting up your environment. Even when we imported the machines, we couldn't copy them or really do anything with them. We still had to create separate templates, blueprints, WIM images and other setup-related duties in order to do anything. Linux support is almost nonexistent except for VirtualCenter cloning, while other operating systems are completely left out. There is no moving or migrating VM functionality at all.

## Operational management

User administrative roles are highly evolved. There are four basic roles for each provisioning group: administrator, user, group manager and support personnel roles. VRM uses Active Directory for users' credential for authentication and authorization purposes so that users can get appropriate access to the VRM Web console. Each user role allows those users to undertake certain administratively defined roles. The enterprise administrator for VRM can assign users to each role.

VM instance control was comparatively weak across platforms. The only commands available to use with the VM are start and stop via the VRM Web console. And stop doesn't shut down the machine completely, it just turns it off, like pushing the power button when something is running. Other management applications tested know how to trigger an orderly guest shutdown.

Also, if you don't use the VRM interface to turn on or turn off the VMs, it doesn't seem to recognize any state change. Other options such as changing the memory, amount of allocated CPUs or other setup options for VM guests are not available and must be done within the native management environment. Although, there is a connect-via-RDP option available, we were unable to get this process to work properly.

VRM lacks alarms and event triggers, but there were logs and reports we could view. The views included capacity usage, inventory, top 10 resources, VM status and audit logs. We could filter by different criteria such as host, user and machine name. Some of the views included nice graphs that were useful to get a quick idea about what is going on.

Besides strong user roles and tying those to Active Directory, there was not anything in particular that made the virtualized environments more or less secure using VRM.

## Insystek TotalView

Insystek TotalView is designed to be a comprehensive environmental management tool for physical and virtual infrastructure. For the purposes of this test, it supports XenServer and VMware ESX and VirtualCenter and a few older virtualization environments not included in our test bed, but it does not support Hyper-V yet.

Insystek's VMware control is decidedly more effective than its control over XenServer. We started out testing TotalView 1.1, but an upgrade to 1.2 arrived during the middle of testing, so we upgraded to it.

While it was quite buggy and crashed when performing certain tasks, TotalView does provide quite a bit of detailed — but mostly static — information about the virtual machines on VMs running atop of our XenServer and VMware ESX hosting platforms. The product does not do a good job of refreshing the information it initially finds. That said, the user interface is a mess, as switching between different — but necessary — areas of the GUI proved to be very painful.

TotalView has a Windows-based GUI that Insystek recommends should be run in an application hosting environment using Windows XP SP2 and SQL Express 2005. Also supported, but not tested — hosting environments include Microsoft Windows 2000 with SP4 and Windows 2003 Server. Other supported databases include MS MSDE and MS SQL Server.

Installation was more difficult than it needs to be, and we had to manually select the SQL Server Express Edition to make things work, a process exacerbated by a strange licensing dysfunction and indecipherable error messages.

With TotalView 1.2 deployed in the test bed (Version 1.1 was wrought with installation issues pertaining to managing XenServer VMs so we

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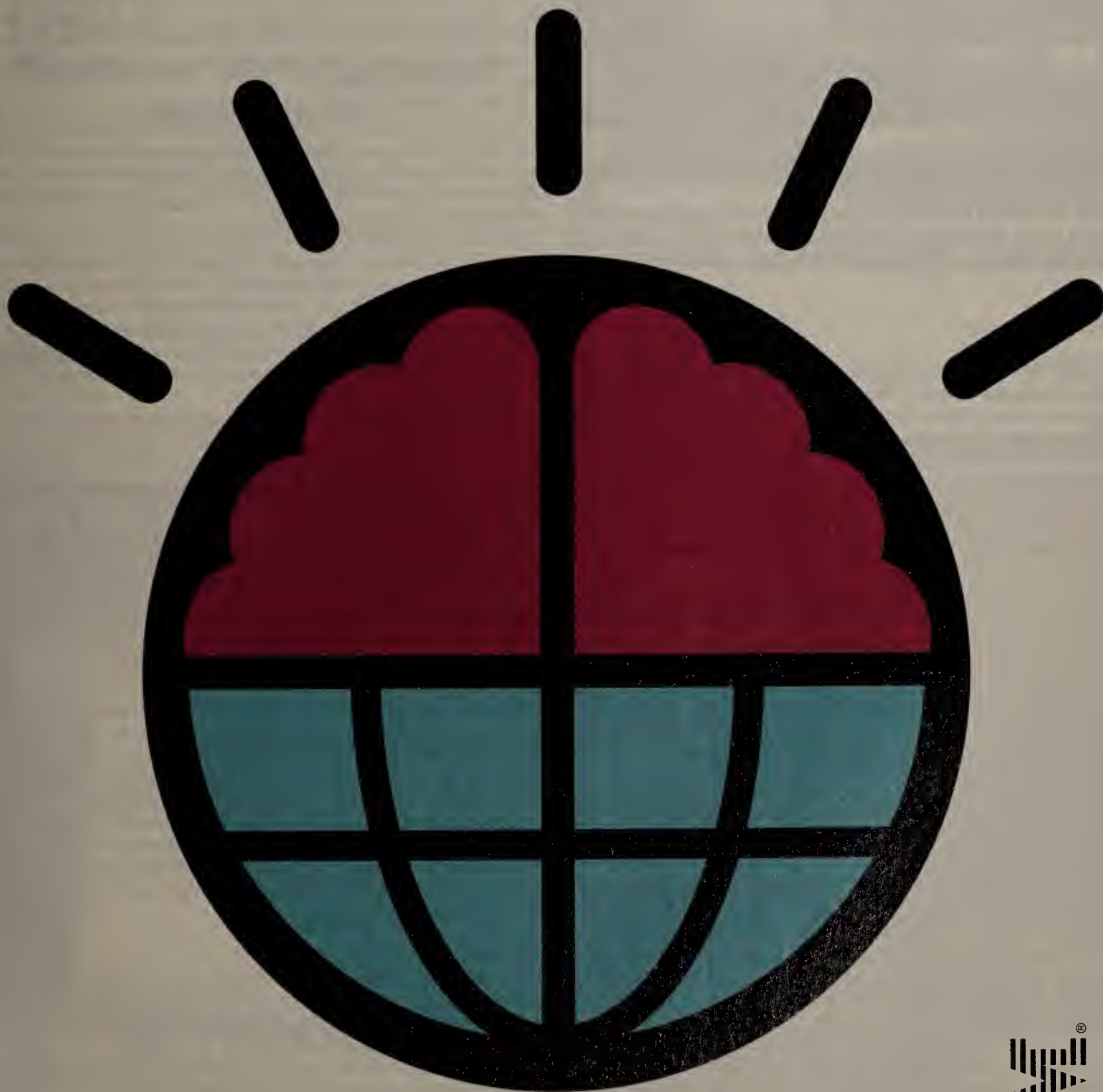
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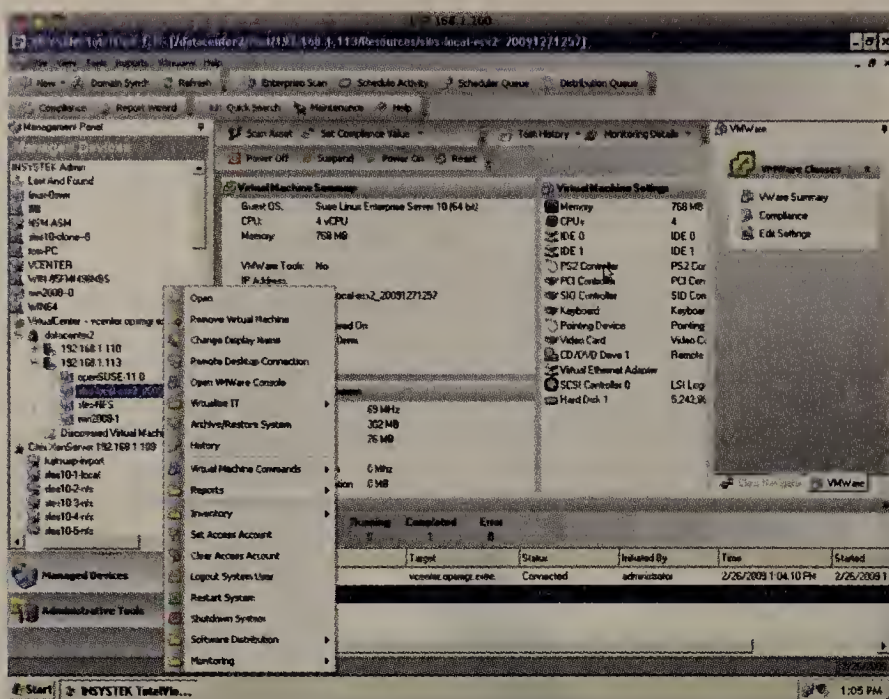


**THINK**





# CLEAR CHOICE TEST VIRTUALIZATION MANAGEMENT



**Insystek TotalView attempts to manage cross-platform VM host and guest life cycles, but didn't fare well in our testing, as the implementation was marred by stability issues.**

## Virtualization

continued from page 28

had to upgrade) we could complete all VM operational basics such as starting and stopping XenServer machines and cloning and uninstalling VMs. However, attempting to suspend VM operation repeatedly yielded the same opaque error message: Failure SR\_HAS\_NO\_PBDS.

We switched to testing how TotalView could manage VMware's ESX machines. TotalView can manage VMware ESX-based VM whether or not VMware's VirtualCenter application is present. After successfully adding an ESX host to the management system, we attempted to create a new VM on that host using the TotalView interface and all methods available to us.

There were two ways to install a VM using TotalView, one was a typical install that uses default settings after selecting the operating type, and the other was a custom install in which we could choose more detailed options. We were able to successfully create a VM (SLES 10.2) using a typical install with Local Storage and it refreshed correctly with TotalView. But while we were editing or changing properties, we noticed that TotalView doesn't refresh very well. It really should refresh more often because it's not very useful to monitor VMs if you have to manually refresh the display all the time.

When we tried installing from a shared DVD ISO image, we had to copy it to our TotalView machine. We couldn't install VMware Tools for SLES (the driver tools that connect the hypervisor and the guest operating system together) as we got a general system error.

We next tried a custom VMware client install using NFS storage for Windows 2008 server. After creating a custom-based VM, TotalView crashed and would not restart and the database was corrupted. We had to re-install again because it gave the same error every time we started up.

Our final creation test worked OK, with no crashing after refreshing. We installed Windows 2008 Server on this VM. TotalView indicated the creation was successful, but the new VM wouldn't show up in the TotalView GUI. When we refreshed the view, TotalView indicated that an "unhandled exception occurred in your application" but we could hit the continue button and ignore the error. These errors seemed to happen all too frequently.

We could verify the VM's existence, but had to do so using VMware's Virtual Infrastructure Client view (the front end to VMware's VirtualCenter management server), but it oddly did not have the same settings that we chose upon creating it with the TotalView tool.

We reinstalled the software, which seemed to help matters, and after

adding the ESX VirtualCenter host to the TotalView system, we could successfully execute commands such as clone, stop and start although other commands such as migrate and clone-to-template were grayed out in the application and therefore unusable.

After creating VMs, we weren't allowed to migrate them as that option was grayed out in the options box. We could do this manually — outside of TotalView, with VMware's tools on VMware and using Citrix XenServer tools.

When we tried to snapshot a VM with TotalView, it seemed like it took the snapshot (we used the VMware Infrastructure client to verify that), but reverted back to the snapshot that was taken, then showed only a black screen and did nothing else. TotalView snapshots did not include the option to save the VM's memory contents (an option that in VMware's client is checked by default), therefore if you take a snapshot of a live VM and then revert while the VM is on, corruption could happen, as we indeed witnessed.

To set up TotalView for day-to-day VM management of environments, we had to connect our virtual environments to the TotalView interface. For each environment, (XenServer, VirtualCenter or plain-old ESX server), we had to enter our credentials. After that, TotalView imported all our VMs into its GUI and listed them for us. Then we were somewhat able to manipulate and control the hosts.

Our beef here is that there is no real-time data collection of what's happening in the VM farm. There are only snapshots of a single state rather than continuous monitoring or graphing of real-time data.

We also need to point out that refreshing the GUI screen did always update the display after we had changed settings or performed a management task. For example, after changing the number of vCPUs allocated to a particular VM, the view showed the previous allocation until we closed the tab and re-opened it again.

User role management was lacking in comparison with the other products tested. There were different user profiles available to us, but no way to restrict what users could really do in terms of access and manipulating the managed VMs. We could only select the administrator role, which gives a user full rights to manage all machines in the virtual environments and use all administration settings (such as scheduling, creating new policies for alerts, adding new users or other admin tasks) or non-administrator roles (people who can manage the VMs but can't set any administration settings).

Each profile was considered a brand-new one, and therefore, we had to manually add the virtual environments again to each profile, which is a time-consuming process as each virtual environment can be password protected.

There are several options for setting policies that would trigger alarms — if they would work properly, they would be of more use. For example we tried created a policy using TotalView to watch VMs should CPU usage exceed a certain threshold on VMware machines, as there were not any metrics for XenServer available that went above a certain level.

We also attempted to apply a policy for network usage. We walked through the steps of selecting and applying the new policy and when we tried to view the status of the policy, the application crashed.

TotalView neither adds nor detracts from VM instance or VM farm security in anyway.

## Conclusions

If conserving VM sprawl was the marching order, the most important component of the tests was how each product maintained control over VM instances and the seemingly inevitable changes that VM instances go through in their life cycle.

We believe that running parallel, platform-specific management tools would cause the least amount of administrative pain at this juncture. But if you need to get some form of cross-platform VM management wares up and running immediately, then CA's NSM/ASM is the best option we tested.

*Henderson and Allen are researchers for ExtremeLabs in Indianapolis. Contact them at [kitchen-sink@extremelabs.com](mailto:kitchen-sink@extremelabs.com).*



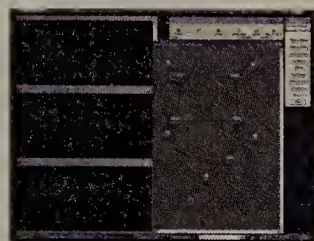


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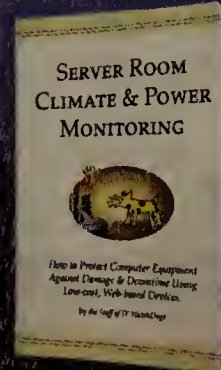
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## Twitter

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tion and those who control its distribution.

The General Services Administration's top management "has been very supportive" of the agency's social media efforts, says B. Leilani Martinez, bilingual content manager with GSA's [www.gobiernousa.gov](http://www.gobiernousa.gov). "That has helped us a lot. Across government, the reaction from top management has been quite inconsistent. Certain government agencies block employees from using some of these tools. For me, I was on Facebook every day from work and on Twitter. GSA allowed us to think outside the box."

Similarly, when the U.S. Strategic Command launched its SKY Web blog in 2005, it was the command's leader, Gen. James Cartright, who pushed the idea forward, Mihelcic says. And it was Transportation Security Administration (TSA) head Kip Hawley who encouraged the agency to create an internal Web 2.0 collaboration environment called The Idea Factory and a public-facing Evolution of Security Blog.

### 3. Start small and grow your social media efforts gradually.

GSA has embraced social media sites one at a time over the last year. First the agency began its [www.govgab.gov](http://www.govgab.gov) blog. Then it began using Twitter. Now it has a pilot project with Facebook. "For certain people [social media] is a big surprise. But we've been preparing for it.... People are more open to it than they were two years ago or even one year ago," Martinez says.

Similarly, NASA started using YouTube, then Facebook and now Twitter, says Robert Jacobs, Acting Assistant Administrator for NASA's Office of Public Affairs. "We stuck our toes in the water with YouTube," Jacobs says. "Then we created some sites [on Facebook]. When Twitter came up, it seemed like a good place for us to create a conversation."

### 4. Keep it simple.

Don't try to add too many social media tools all at once, advises Chris Rasmussen, an intelligence official responsible for Intellipedia, a wiki used by the National Security Agency, the Central Intelligence Agency and the military. Rasmussen says the intelligence community has too many Web 2.0 tools, including blogging, social bookmarking, video sharing, photo sharing, document storage, desktop conferencing, chat and a Facebook-type application. The problem, he says, is that analysts are using these tools and then doing their work over again using more traditional methods. "Take two things, and focus on the two," he advises.

### 5. Make sure the data on social media applications is relevant.

Don't put data out there for data's sake, recommends Adelaide O'Brien, research manager for IDC's Government Insights. Provide data to citizens that they can "use to solve

their own problems, become better educated and let them comment back."

You also need to understand the quality of the data being shared on internal social media applications. "If we're going to make a decision of the deployment of U.S. forces, we need to know what that information is based on and that it has a reasonable pedigree. That it's authoritative. How do we indicate a piece of information is known to be true? How do we differentiate it from all the other information that's out there? One of the ways we're looking to do that is with a ranking system," DISA's Mihelcic says.

### 6. Set aside enough resources for social media efforts.

These channels require ongoing monitoring and constant enhancement. Intellipedia has more than 20 moderators — dubbed gardeners — who watch wiki changes, clean up errors and keep conversations focused on the topic. NASA has a staff of 10 public affairs officials contributing to its main Twitter stream. TSA has five bloggers for its Evolution of Security Blog.

Another resource issue: storage. "If you need to keep the data forever and you need to keep it accessible forever...the requirements for archival are going to grow," Mihelcic says, adding that he sees promise in cloud-based storage services for Web 2.0 information.

### 7. Set expectations on the frequency of your updates and how fast you can respond to comments.

Be careful about the expectations you set with the public in terms of how often you are going to blog or how quickly you are going to respond to comments. "If you start a blog as a leader in government, and you accept comments, and people suggest things to do, the issue is: What are you going to do with that information?" Trudeau asks. "You're setting an expectation that you're going to take some action based on the suggestions you receive." It helps to integrate new media into employees' existing workflow. At NASA, for example, public affairs officials send out daily tweets.

### 8. Don't be afraid to replace a legacy media process with a new social media process.

One of the biggest problems with social media tools is that they get added on top of employees' workloads without older processes being stopped. "The [Web 2.0] tools are great, but then they are actually kind of viewed as lesser than real work because my kids use them. They have funny names. Serious work is done in e-mail and proprietary databases," Rasmussen says. That's why intelligence analysts are writing the same reports twice: once on Intellipedia and again on a legacy agency-specific system.

### 9. Establish metrics to measure whether your new media approaches are working.

Trudeau says most social networking applications follow the 90/1 rule, with 1% of the people accounting for the vast majority of contributions. Another 9% contribute occasionally, and the other 90% are only reading the exchanges. "The 90/1 rule is OK. If you have 43,000 users, and 1% are contributing ideas, that's still a lot of new ideas," Trudeau says.

Jacobs says the best measure of Twitter's effectiveness is the degree to which information is re-tweeted and shared across the microblogging site.

### 10. Don't forget security.

"You need to focus on security up front," DISA's Mihelcic says. "If you're going to leverage a new media wiki, you need to understand what are the risks that are implied by that deployment and how can you manage those risks." He says you need to understand the operating system, the disaster-recovery requirements and the scaling requirements when considering security. Most of the Department of Defense's Web 2.0 applications run on internal networks that use public-key infrastructure (PKI) certificates to verify users. ■

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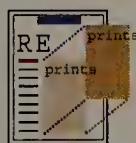
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*"To retain respect for sausages and laws, one must not watch them in the making."*

— Otto von Bismarck

A bill currently in draft, which is sponsored by Sen. John Rockefeller (D-Va.), chairman of the Senate Committee on Commerce, Science, and Transportation, and Sen. Olympia Snowe (R-Maine), is a great example of how watching political sausage making will cause you to lose

all respect for those cranking the handle.

The nascent bill proposes that the president be given what will be, in effect, the power to shut down the Internet.

This bill is a working draft, so to some greater or lesser extent it is "flying a kite". It has a lot more hurdles and scrutiny to face before it gets near to becoming law. That said, the fact that anyone would put forward such a bill is just marginally this side of insane.

Here's the really contentious things the bill proposes: In Section 18, (4) it says the president "may declare a cybersecurity emergency and order the limitation or shutdown of Internet traffic to and from any compromised Federal government or United States critical infrastructure information system or network". Section 18, (6) adds, the president "may order the disconnection of any Federal government or United States critical infrastructure information systems or networks in the interest of national security".

In other words, the bill gives the president an Internet Kill Switch to go along with his Nuclear-Destroy-the-World Button.

To say that the Internet Kill Switch is a bad idea is only scratching the surface of how wrongheaded the proposal is. The more rabid right wingers out there might argue that the idea is rational because preventing the enemy from communicating and protecting our vulnerabil-

ities are two keys to self defense. That argument is, as a famous philosopher once said, "a load of dingoes kidneys."

First, we have to ask if an Internet Kill Switch is even possible. The Internet is the biggest distributed communications system mankind has ever created, and to misquote John Gilmore's famous assertion: "The 'Net interprets control as damage and routes around it." The 'Net is too big and too complex to be shut down in any meaningful way, even if the extent of the disconnection was limited to federal connections.

And there in lies the second concern: We have to be wary of what constitutes "critical infrastructure". Would this just be limited to governmental Internet connections, or would it extend, as Rockefeller has suggested, to online services "of interest" to the government such as private sector infrastructure that could include banking, utilities, air/rail/auto traffic control and telecommunications? If the latter was the case surely this would require an unheard of level of federal oversight, huge expense for both the government and business, and mandated standards beyond the wildest dreams of any hardcore bureaucrat.

Third, we have to consider whether an Internet Kill Switch is actually necessary. We haven't given the president the authority to shut down the telephone and cell phone systems, so why single out the Internet? If this bill is serious then it needs to address the bigger communications picture. And that can't be done.

Finally, we have to consider what giving the government such authority would really mean. For example, we know from experience that you give the feds an inch and they'll put you under surveillance.

This bill needs to die a quiet death. You don't want to see this particular sausage even contemplated, let alone made.

*Gibbs has yet to make sausages in Ventura, Calif. Your recipes to backspin@gibbs.com.*



## NETBUZZ

News, Insights, oddities

# Workplace surfing hounds have new hero

**S**urfing the Internet for fun while at work actually increases employee productivity, insists Dr. Brent Coker, a researcher at the University of Melbourne's Department of Management and Shirking.

The press release touting this new research was dated April 2, so I am presuming that it was presented in good faith.

"People who do surf the Internet for fun at work — within a reasonable limit of less than

20% of their total time in the office — are more productive by about 9% than those who don't," he says. "Firms spend millions on software to block their employees from watching videos on YouTube, using social networking sites like Facebook or shopping online under the pretense that it costs millions in lost productivity, however that's not always the case."

Coker even has a catchy acronym for the behavior he's championing: WILB, which stands for "workplace Internet leisure browsing."

Try this one next time a supervisor gives you the stink-eye for having YouTube open on your desk: "Back-off, boss, I'm WILBing here ... and it's good for the bottom line."

Coker's conclusions were based on a survey of 300 workers, 70% of whom were dedicated enough to their jobs and their employers to surf the Internet for fun while on the company dime. The gist of his theory is that employees "need to zone out for a bit" in order to maximize their effectiveness.

In all seriousness, there's little reason to doubt the general point: Productive workers need periodic breaks, both physical and mental, or at least that's what I tell myself every time I point my browser at The Onion or take a stroll into the staff lounge.

However, if that's such an article of faith, what about that 30% of work-

ers who admit they're cheating the company by not taking their therapeutic surfing breaks? Not only are they not being team players, it seems to me they're taking a huge risk of being labeled unproductive in this down economy.

Perhaps the answer for these laggards should be mandatory surfing breaks? I think I'm on to something here.

## Online brokerage: "We're not stupid, we're screw-ups"

Every year someone goes careening over the metaphoric cliff that April Fool's Day can be for a prankster without proper judgment.

Even so, Internet stock-trading house Zecco wants the world to know that it couldn't possibly have been stupid enough to concoct an April Fool's Day prank that had customers seeing fantastical seven-figure account balances, and, believing themselves to be just playing along, trading as though the new-found fortunes were real.

They were not real, of course — there were technical problems — although losses and fees accrued through those accounts turned out to be more problematic.

After a story on the Consumerist Web site flagged the train wreck as an ill-advised April Fool's joke, Zecco was forced to set the record straight: "We did not perpetrate an April Fool's Joke on our customers ... In no way (were we) trying to be funny regarding such a sensitive matter as your buying power or account balance."

So let that be a lesson: Don't screw up on April Fool's Day.

Incidentally, this little kerfuffle had escaped my attention altogether at the time because I spent a good deal of April Fool's Day morning stuck in an elevator. Really, it's on the Internet and everything — [www.nwdocfinder.com/9533](http://www.nwdocfinder.com/9533) — so you know it must be true.

*Comments, questions or a favorite WILB site? The address is [buzz@nww.com](mailto:buzz@nww.com).*





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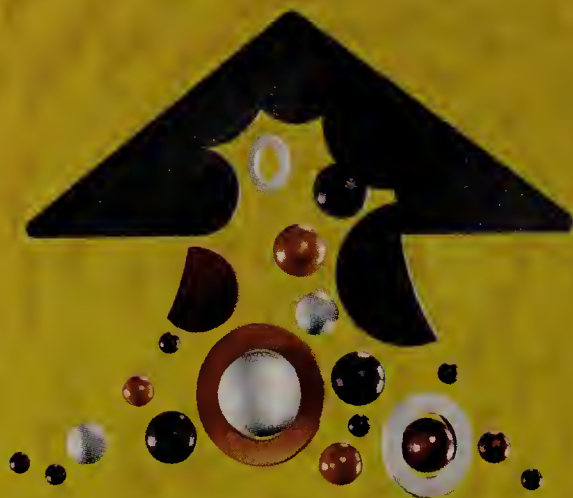


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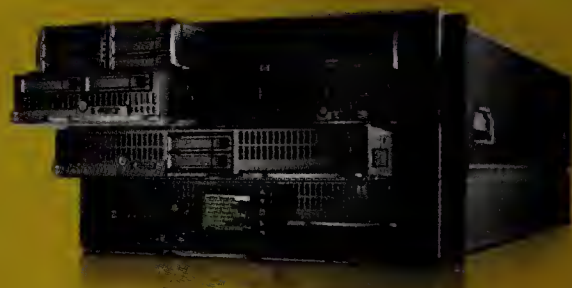
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